City of Chino Hills

Chino Hills General Plan Update

Greenhouse Gas Study

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Environmental Scientists Planners Engineers

Chino Hills General Plan Update

Greenhouse Gas Study

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CHINO HILLS GENERAL PLAN UPDATE
CHINO HILLS, CALIFORNIA
GREENHOUSE GAS STUDY

This report is an analysis of the potential greenhouse gas (GHG) emissions impacts of the proposed General Plan Update for the City of Chino Hills in California. The report has been prepared by Rincon Consultants, Inc. under contract to the City of Chino Hills for use in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the proposed project's effects on GHG emissions and the associated impact to climate change. This study describes climate change, GHGs, and the current regulatory framework, and estimates GHG emissions associated with build-out of the General Plan Update. The analysis herein is based partially on the traffic impact study prepared by Minagar & Associates, Inc. (June 2013).

PROJECT DESCRIPTION

The City of Chino Hills is located in the Chino Valley within San Bernardino County. Chino Hills has a current population of 76,240 (as estimated by multiplying the California Department of Finance's [May 2013] vacancy rate and number of persons per household by the number of housing units in the City)) and its boundaries encompass approximately 28,744 acres.

Chino Hills is currently updating its General Plan. The General Plan is the long-range policy document that guides physical community development throughout the City. The General Plan establishes goals and objectives to guide decision-making by City officials and staff. The General Plan Update would update and supersede the City's current General Plan, which was adopted on September 13, 1994, and has a planning horizon from 1994 to 2013. The General Plan includes eight elements: Land Use; Circulation; Housing; Parks, Recreation, and Open Space; Conservation; Safety; Noise; and Economic Development. The proposed General Plan Update covers six of these elements, but the Housing Element and the Parks, Recreation, and Open Space Element are not included in the update. Greenhouse gas issues are primarily addressed in the Conservation Element, though other elements (i.e. Land Use and Circulation) also relate to greenhouse gases. The proposed General Plan Update would have a planning horizon from 2014 to 2035.

The General Plan Update includes changes to the Land Use Map and would facilitate residential and commercial development. Table 1 summarizes the increase in residential units and commercial and institutional space as a result of buildout of the General Plan Update.

Table 1
Existing and Future Development in Chino Hills

Land Use	Existing Chino Hills Development	Proposed General Plan Buildout	Change as a Result of Proposed General Plan
Residential			
Single Family Units	19,863 units	22,917 units	3,054 units
Multi-Family Units	3,930 units	6,698 units	2,768 units
		Total	**5,822 units**
Commercial/Institutional			
Mixed Use (non-residential)	None	33,087 sf	33,087 sf
Commercial	3,386,649 sf	4,737,574 sf	1,350,925 sf
Business Park	467,733 sf	836,733 sf	369,000 sf
Commercial Recreation	216,428 sf	216,428 sf	0
Institutional/Public Facility	1,775,042 sf	2,132,563 sf	357,521 sf
		Total	**2,110,533 sf**

sf= square feet
Source: City of Chino Hills

SETTING

Overview of Climate Change

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, 2007), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (90% or greater chance) that the global average net effect of human activities since 1750 has been one of warming. The prevailing scientific opinion on climate change is that most of the observed increase in global average temperatures, since the mid-20th century, is likely due to the observed increase in anthropogenic GHG concentrations (IPCC, 2007).

Greenhouse Gases (GHGs)

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and sulfur hexafluoride (SF_6) (California Environmental Protection Agency [CalEPA], 2006). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO2) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a GWP of one. By contrast, methane (CH_4) has a GWP of 21, meaning its global warming effect is 21 times greater than carbon dioxide on a molecule per molecule basis (IPCC, 1997).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHG, Earth's surface would be about 34° C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [U.S. EPA], April 2012). CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th Century. Concentrations of CO_2 in the atmosphere have risen approximately 40% since the industrial revolution. The global atmospheric concentration of CO_2 has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC, 2007; Oceanic and Atmospheric Association [NOAA], 2010; and, The World Bank, 2012). The average annual CO_2 concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2010). Currently, CO_2 represents an estimated 82.8% of total GHG emissions

(Department of Energy [DOE] Energy Information Administration [EIA], August 2010). The largest source of CO_2, and of overall GHG emissions, is fossil fuel combustion.

Methane. Methane (CH_4) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO_2 and its lifetime in the atmosphere is limited to 10 to 12 years. It has a global warming potential (GWP) approximately 21 times that of CO_2. Over the last 250 years, the concentration of CH_4 in the atmosphere has increased by 148 percent (IPCC, 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH_4 include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (U.S. EPA, April 2012).

Nitrous Oxide. Concentrations of nitrous oxide (N_2O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2010). N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N_2O emissions. The GWP of nitrous oxide is approximately 310 times that of CO_2.

Fluorinated Gases (HFCS, PFCS and SF6). Fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfurhexafluoride (SF_6), are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF6 emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO_2, CH_4, and N_2O, but these compounds have much higher GWPs. SF_6 is the most potent GHG the IPCC has evaluated with a GWP of 23,900.

Greenhouse Gas Inventory

Worldwide anthropogenic emissions of GHGs were approximately 40,000 million metric tons (MMT) CO_2e in 2004, including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay) (IPCC, 2007). CO_2 emissions from fossil fuel use accounts for 56.6 percent of the total emissions of 49,000 MMT CO_2e (includes land use changes) and CO_2 emissions from all sources account for 76.7 percent of the total. Methane emissions account for 14.3 percent of GHGs and N_2O emissions account for 7.9 percent (IPCC, 2007).

Total U.S. GHG emissions were 6,821.8 MMT CO_2e in 2009 (U.S. EPA, April 2012). Total U.S. emissions have increased by 10.5 percent since 1990; emissions rose by 3.2 percent from 2009 to 2010 (U.S. EPA, April 2012). This increase was primarily due to (1) an increase in economic output resulting in an increase in energy consumption across all sectors; and (2) much warmer summer conditions resulting in an increase in electricity demand for air conditioning. Since 1990, U.S.

emissions have increased at an average annual rate of 0.5 percent. In 2010, the transportation and industrial end-use sectors accounted for 32 percent and 26 percent of CO_2 emissions from fossil fuel combustion, respectively. Meanwhile, the residential and commercial end-use sectors accounted for 22 percent and 19 percent of CO_2 emissions from fossil fuel combustion, respectively (U.S. EPA, April 2012).

Based upon the California Air Resources Board (ARB) California Greenhouse Gas Inventory for 2000-2009 (ARB, October 2011), California produced 453 MMT CO_2e in 2009. The major source of GHG in California is transportation, contributing 38 percent of the state's total GHG emissions. Electricity generation is the second largest source, contributing 23 percent of the state's GHG emissions (ARB, October 2012). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. The ARB has projected statewide unregulated GHG emissions for the year 2020 will be 507 MMT CO_2e (ARB, April 2012). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Scientists have projected that the average global surface temperature could rise by1.0-4.5°F (0.6-2.5°C) in the next 50 years, and the increase may be as high as 2.2-10°F (1.4-5.8°C) in the next century. In addition to these projections, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic (IPCC, 2007).

According to the CalEPA's 2010 Climate Action Team Biennial Report, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA, April 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Sea Level Rise. According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (CCCC) (May 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The study identifies a sea level rise on the California coast over the past century of approximately eight inches. Based on the results of various global climate change models, sea level rise is expected to continue. The California Climate Adaptation Strategy (December 2009) estimates a sea level rise of up to 55 inches by the end of this century.

Air Quality. Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are

accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC March, 2009).

Water Supply. Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], 2008; CCCC, May 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during our wet winters and releasing it slowly when we need it during our dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008).

Hydrology. As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a $30 billion agricultural industry that produces half of the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC, 2006).

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2004; Parmesan, C. and H. Galbraith, 2004).

While the above-mentioned potential impacts identify the possible effects of climate change at a global and potentially statewide level, in general scientific modeling tools are currently unable to predict what impacts would occur locally with a similar degree of accuracy. In general, regional and local predictions are made based on downscaling statewide models (CEC, March 2009).

Regulatory Setting

The following regulations address both climate change and GHG emissions.

International Regulations. The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was produced by the United Nations in 1992. The UNFCCC is an international environmental treaty with the objective of, "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm, in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC 2007). The UNFCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called "protocols," that would identify mandatory emissions limits.

Five years later, the UNFCC brought nations together again to draft the Kyoto Protocol (1997). The Kyoto Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs) to 5.2 percent below 1990 levels by 2012. The United States is a signatory of the Kyoto Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol's commitments (UNFCCC, 2007). The first commitment period of the Kyoto Protocol ended in 2012. Governments, including 38 industrialized countries, agreed to a second commitment period of the Kyoto Protocol, beginning January 1, 2013 and ending either on December 31, 2017 or December 31, 2020, to be decided by the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its seventeenth session (UNFCCC, November 2011).

In Durban (17th session of the Conference of the Parties in Durban, South Africa, December 2011), governments decided to adopt a universal legal agreement on climate change as soon as possible, but not later than 2015. Work will begin on this immediately under a new group called the Ad Hoc Working Group on the Durban Platform for Enhanced Action. Progress was also

made regarding the creation of a Green Climate Fund (GCF) for which a management framework was adopted (UNFCCC, December 2011;United Nations, September 2012).

Federal Regulations. The United States is currently using a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol's mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (led by the Secretaries of Energy and Commerce) that is charged with carrying out the President's National Climate Change Technology Initiative (U.S. EPA, December 2007). However, the voluntary approach to address climate change and greenhouse gas emissions may be changing. The United States Supreme Court in Massachusetts et al. v. Environmental Protection Agency et al. ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act.

The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports were due in March 2011.
On May 13, 2010, the U.S. EPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 million tons (MT) CO_2e per year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the U.S. EPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The U.S. EPA's guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the U.S. EPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other big pollution point sources.

On January 2, 2011, the U.S. EPA implemented the first phase of the Tailoring Rule for industrial-source GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 MT CO_2e per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 MT CO_2e per year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 MT CO_2e per year.

California Regulations. Assembly Bill (AB) 1493 (2002), referred to as "Pavley," requires ARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, EPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025. Fleet average emission standards would reach 22 per cent reduction by 2012 and 30 per cent by 2016.

In 2005, Governor Schwarzenegger issued Executive Order S-3-05, establishing statewide GHG emissions reduction targets. Executive Order (EO) S-3-05 provides that by 2010, emissions shall be

reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80% of 1990 levels (CalEPA, 2006). In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05), and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, the ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO_2e. The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

Executive Order S-01-07 was enacted on January 18, 2007. The order mandates establishment of a Low Carbon Fuel Standard ("LCFS") for transportation fuels to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020.

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

Senate Bill (SB) 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing ARB to develop regional greenhouse gas emission reduction targets to be achieved from vehicles for 2020 and 2035. SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010 ARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Southern California Association of Governments (SCAG) was assigned targets of an 8% reduction in GHGs from transportation sources by 2020 and a 13% reduction in GHGs from transportation sources by 2035. In April

2012, SCAG adopted the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). SCAG's RTP/SCS includes a commitment to reduce emissions from transportation sources by promoting compact and infill development in order to comply with SB 375.

ARB Resolution 07-54 establishes 25,000 metric tons of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005% of California's total inventory of GHG emissions for 2004.

In April 2011, Governor Brown signed SB 2X requiring California to generate 33% of its electricity from renewable energy by 2020.

For more information on the Senate and Assembly bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and http://www.arb.ca.gov/cc/cc.htm.

Local Regulations and CEQA Requirements. The San Bernardino Associated Governments (SANBAG) is in the process of developing the *San Bernardino County Regional Greenhouse Gas Reduction Plan*. The public draft of the report was released in June, 2013. The plan includes a regional greenhouse gas inventory and summarizes actions that participating jurisdictions have selected in order to reduce GHG emissions. As part of the plan, the City of Chino Hills selected a goal to reduce its community GHG emissions to a level that is 20% below its projected emissions level in 2020. The City actually exceeds the goal with only state/county level actions (112% of goal), but has committed to additional local measures and to support applicable regional measures. Additional measures include implementing SB X7-7 to reduce water use in the City, encouraging the installation of solar energy collectors (e.g. photovoltaics) for existing housing (reducing energy use), and working with the City's wastewater treatment provider to upgrade to more energy efficient equipment at the wastewater treatment plant.

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, but do not contain suggested thresholds of significance for GHG emissions. Instead, they give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a Threshold of Significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions, as needed to move the state towards climate stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant. To date, the Bay Area Air Quality Management District (BAAQMD), the South Coast Air Quality Management District (SCAQMD), and the San Joaquin Air Pollution Control District (SJVAPCD) have adopted quantitative significance thresholds for GHGs. The SCAQMD threshold, which was adopted in December 2008, considers emissions of over 10,000 metric tons CO_2e/year to be significant. However, the SCAQMD's threshold applies only to stationary sources and is expressly intended to apply only when the SCAQMD is the CEQA lead agency. Although not yet adopted, the SCAQMD has a recommended performance

threshold for planning documents of 6.6 MT/year CO_2e per service population (SCAQMD, "Proposed Tier 4 Performance Standards – Option 3", September 2010). Service population (SP) is defined as residents plus employees.

IMPACT ANALYSIS

Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions in March 2010. These guidelines are used in evaluating the cumulative significance of GHG emissions from the proposed project. According to the adopted CEQA Guidelines, impacts related to GHG emissions from the proposed project would be significant if the project would:

- *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or*
- *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence on climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

The significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). Though General Plan Update Policy CN-3.2 calls for development and implementation of a Climate Action Plan, the City of Chino Hills has not yet adopted GHG thresholds or a GHG emissions reduction plan with established GHG emissions reduction strategies. Because the SCAQMD has not yet adopted GHG emissions thresholds that apply to projects where the SCAQMD is not the lead agency and no GHG emissions reduction plan or GHG emissions thresholds have been adopted in Chino Hills, the proposed project is evaluated based on the SCAQMD's plan level threshold of 6.6 MT/year CO_2e per SP.

Therefore, the proposed project's contribution to cumulative impacts related to GHG emissions and climate change would be cumulatively considerable if the project would generate more than 6.6 metric tons of CO_2e per SP per year. Additionally, in determining whether or not the proposed project's GHG emissions are "cumulatively considerable," an inconsistency with applicable GHG emissions reductions strategies would be a significant impact under the second significance threshold discussed above.

Methodology

Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98.9 percent of all GHG emissions by volume (IPCC, 2007) and are the GHG emissions that the

project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, the quantity of fluorinated gases would not be significant since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent weight in CO_2 (CO_2e). Minimal amounts of other main GHGs (such as chlorofluorocarbons [CFCs]) would be emitted; however, these other GHG emissions would not substantially add to the calculated CO_2e amounts. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* white paper (January 2008) and included the use of the California Climate Action Registry (CCAR) General Reporting Protocol (January 2009).

This analysis focuses on the GHG emissions and the service population for the potential development that would be facilitated by the General Plan Update. This analysis does not quantify existing GHG emissions associated with current development in Chino Hills but rather focuses on the potential development facilitated by the proposed General Plan Update as the potential development could result in a change of GHG emissions compared to existing conditions.

On-Site Operational Emissions. Operational emissions from energy use (electricity and natural gas use) for the project were estimated using the California Emissions Estimator Model (CalEEMod) 2013 Version 2013.2.2 software program (see Appendix for calculations). The default values on which the CalEEMod software program are based include the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies. CalEEMod provides operational emissions of CO_2, N_2O and CH_4. This methodology is considered reasonable and reliable for use, as it has been subjected to peer review by numerous public and private stakeholders, and in particular by the CEC; it is also recommended by CAPCOA (January 2008).

Emissions associated with area sources, including hearths (related interior residential fireplaces), consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from CARB, U.S. EPA, and district supplied emission factor values (CalEEMod User Guide, 2013).

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (CalEEMod User Guide, 2013). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater usage calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern and Southern California.

Direct Emissions from Mobile Combustion. Emissions of CO_2 and CH_4 from transportation sources for the proposed project were quantified using the CalEEMod software model. Because the CalEEMod software program does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the California Climate Action Registry General

Reporting Protocol (January 2009) direct emissions factors for mobile combustion (see Appendix for calculations). As the traffic study for the General Plan Update (Minagar & Associates, Inc., June 2013) did not include an estimate of total daily trips associated with full General Plan buildout, the estimate of total daily trips associated with the General Plan Update was based on the standard Institute of Transportation Engineers (ITE) vehicle trip rates (used in CalEEMod and in the traffic study) and was calculated and extrapolated to derive total annual mileage in CalEEMod. Emission rates for N_2O emissions were based on the vehicle mix output generated by CalEEMod and the emission factors found in the California Climate Action Registry General Reporting Protocol.

A limitation of the quantitative analysis of emissions from mobile combustion is that emission models, such as CalEEMod, evaluate aggregate emissions, meaning that all vehicle trips and related emissions assigned to a project are assumed to be new trips and emissions generated by the project itself. Such models do not demonstrate, with respect to a regional air quality impact, what proportion of these emissions are actually "new" emissions, specifically attributable to the project in question. For most projects, the main contributor to regional air quality emissions is from motor vehicles; however, the quantity of vehicle trips appropriately characterized as "new" is usually uncertain as traffic associated with a project may be relocated trips from other locales. Therefore, because the proportion of "new" versus relocated trips is unknown, the VMT estimate generated by CalEEMod is used as a conservative, "worst-case" estimate.

Construction Emissions. Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches (as discussed below in *GHG Cumulative Significance*) adequately address impacts from temporary construction activity. As stated in the *CEQA and Climate Change* white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA, 2008). Nevertheless, air districts such as the SCAQMD (2011) have recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed project's operational emissions.

Construction of the proposed project would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. The CalEEMod software program was used to estimate emissions associated with the construction period, based on parameters such as the duration of construction activity, area of disturbance, and anticipated equipment used during construction.

Estimate of GHG Emissions

Construction Emissions. For the purpose of this analysis, construction activity is assumed to occur over a period of approximately twenty years from 2015 to 2035, or the General Plan Update buildout year. As stated in the Project Description, the proposed General Plan Update would facilitate development of 5,822 housing units and 2,110,533 square feet of commercial/ institutional space. Based on the CalEEMod model results, construction activity for the project would generate an estimated 109,589 metric tons of carbon dioxide equivalent (CO_2e) units (as shown in Table 2). Amortized over a 30-year period (the assumed life of the proposed development), construction of the residential units would generate an estimated 3,653

metric tons of CO_2e per year. (See Table 10 for comparison of total greenhouse gas emissions associated with the General Plan Update to thresholds).

Table 2
Estimated Construction Emissions of Greenhouse Gases

Emission Source	Annual Emissions	
	Emissions (metric tons)	Carbon Dioxide Equivalent (CO_2e)
Carbon Dioxide (CO_2)	109,489.1	109,489 metric tons
Methane (CH_4)	4.7	100 metric tons
Nitrous Oxide (N_2O)	0.0*	0.0 metric tons
Total		**109,589 metric tons**
Amortized over 30 years		**3,653 metric tons per year**

Source: See Table 2.1, "Unmitigated Construction" of annual CalEEMod modeling results in Appendix. Assumes development of 5,822 housing units and 2,110,533 square feet of commercial/ institutional space.
** N_2O emissions are not anticipated to occur as the type of construction equipment associated with development that would emit GHG emissions does not emit a significant amount of N_2O emissions. The modeling results (using CalEEMod) estimate that the N_2O would be 0 metric tons per year.*

Operational Indirect and Stationary Direct Emissions.

Area Source Emissions. The CalEEMod model was used to calculate direct sources of air emissions located throughout the potential new residential and commercial sites. This includes hearths, consumer product use, architectural coatings, and landscape maintenance equipment. As shown in Table 3, the area sources would generate approximately 1,959 metric tons CO_2e per year.

Table 3
Estimated Annual Area Source Greenhouse Gas Emissions

Emission Source	Annual Emissions
Architectural Coating	<0.001 metric tons CO_2e
Consumer Products	<0.001 metric tons CO_2e
Hearth	1,859 metric tons CO_2e
Landscaping	100 metric tons CO_2e
Total	**1,959 metric tons CO_2e**

Source: See Table 6.2, "Area by SubCategory- unmitigated," of annual CalEEMod modeling results in Appendix

Energy Use. Operation of the potential new residences and commercial uses would consume both electricity and natural gas. The generation of electricity through combustion of fossil fuels typically yields CO_2, and to a smaller extent, N_2O and CH_4. As discussed above, annual electricity and natural gas emissions can be calculated using default values from the CEC sponsored CEUS and RASS studies which are built into the CalEEMod model.

Table 4
Estimated Annual Energy-Related Greenhouse Gas Emissions

Emission Source	Annual Emissions
Electricity	18,310 metric tons CO_2e
Natural Gas	7,622 metric tons CO_2e
Total	**25,932 metric tons CO_2e**

Source: See Table 5.1, "Mitigation Measures Energy," of annual CallEEMod modeling results in Appendix.

As shown in Table 4, electricity consumption associated with the project would generate approximately 18,310 metric tons CO_2e per year. Natural gas use would generate approximately 7,622 metric tons CO_2e per year. Thus, overall energy use at the project site would generate approximately 25,932 metric tons of CO_2e per year.

Solid Waste Emissions. It is anticipated that the potential new residences and commercial uses would generate approximately 3,492 tons of solid waste per year according to the CalEEMod output (assuming 50% diversion rate in accordance with AB 939). As shown in Table 5, based on this estimate, this aspect of the project would generate approximately 1,588 metric tons of CO_2e per year.

Table 5
Estimated Annual Solid Waste Greenhouse Gas Emissions

Emission Source	Annual Emissions
Solid Waste	**1,588 metric tons CO_2e**

Source: See Table 8.2, "Waste by Land Use – Mitigated" of annual CalEEMod modeling results in Appendix. Assumes 50% diversion rate in accordance with AB 939.

Water Use Emissions. Based on the amount of electricity generated in order to supply water to development facilitated by the General Plan Update, as shown in Table 6, approximately 4,260 metric tons of CO_2e would be generated per year.

Table 6
Estimated Annual Greenhouse Gas Emissions from Water Use

Emission Source	Annual Emissions
Water Use	**4,260 metric tons CO_2e**

Source: See Table 7.2, "Water by Land Use – Unmitigated" of annual CalEEMod modeling results in Appendix.

Transportation Emissions. As the traffic study for the General Plan Update (Minagar & Associates, Inc., June 2013) did not include an average daily traffic (ADT) estimate for full General Plan buildout, mobile source GHG emissions were estimated using the average daily trips for residences and by the total vehicle miles traveled (VMT) estimated in CalEEMod. CalEEMod trip generation rates are based on the Institute of Transportation Engineers (ITE), which are also utilized in the traffic study. Based on the CalEEMod model estimate, potential development would generate approximately 199,507,218 annual VMT.

Table 7 shows the estimated mobile emissions of GHGs for the project based on the estimated annual VMT. As noted above, the CalEEMod model does not calculate N_2O emissions related to mobile sources. As such, N_2O emissions were calculated based on the project's VMT using calculation methods provided by the California Climate Action Registry General Reporting Protocol (January 2009). As shown in Table 7 below, the project would result in approximately 84,078 metric tons of CO_2e units associated with mobile emissions.

Table 7
Estimated Annual Mobile Emissions of Greenhouse Gases

Emission Source	Annual Emissions
Mobile Emissions (CO_2 & CH_4) [1]	79,722 metric tons CO_2e
Mobile Emissions (N_2O) [2]	4,356 metric tons CO_2e
Total	**84,078 metric tons CO_2e**

[1] See Table 4.1 of CalEEMod annual modeling results in Appendix. Assumes 199,507,218 annual vehicle miles traveled and that the General Plan Update would increase density to 5.5 dwelling units/acre and 3.6 jobs/job acre and improve the pedestrian network.
[2] See Appendix for calculations according to California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1,January 2009, page 30-35.

Combined Construction, Stationary and Mobile Source Emissions. Table 8 combines the construction, operational, and mobile GHG emissions associated with General Plan Update buildout. Construction emissions associated with construction activity are amortized over 30 years (the anticipated life of the project).

Table 8
Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions
Construction	3,653 metric tons CO_2e
Operational	
Area	1,959 metric tons CO_2e
Energy	25,932 metric tons CO_2e
Solid Waste	1,588 metric tons CO_2e
Water	4,260 metric tons CO_2e
Mobile	84,078 metric tons CO_2e
Total	**121,470 metric tons CO_2e**

Sources: See Tables 2-7 and annual CalEEMod emissions estimates in Appendix for calculations and for GHG emission factor assumptions.

For the proposed General Plan Update, the combined annual emissions would total approximately 121,470 metric tons per year in CO_2e units.

SCAQMD's plan-based threshold is 6.6 metric tons CO_2e per service population per year (SCAQMD, "Proposed Tier 4 Performance Standards," September 2010). Service population is defined as both residents and employees. Table 9 shows the total service population associated with buildout of the General Plan Update.

Table 9
General Plan Update Service Population

Land Use	Amount	Multiplication Factor	Total
Residences	5,822 units	3.3 persons/household*	19,213 residents***
Commercial/Mixed Use	1,384,012 sf	344 sf/employee**	4,024 employees
Business Park	369,000 sf	288 sf/employee**	1,282 employees
Commercial Recreation	0	n/a	0
Institutional/Public Facility	357,521 sf	261 sf/employee**	1,370 employees
		Total Service Population	**25,889**

** California Department of Finance, May 2013*
*** SCAG Employment Density Study, 2001, http://www.scag.ca.gov/forecast/downloads/employ_den.pdf*
****This number assumes that all residential units would be occupied, it does not take into account the vacancy rate.*

Based on the number of potential new residences and commercial space, the proposed General Plan update would add approximately 25,889 residents and employees. Therefore, the proposed General Plan Update would result in approximately 4.7 metric tons CO_2e per service population per year (121,470 MT CO_2e per year / 25,889 SP = 4.7 MT CO_2e/SP/year, see Table 10). This

would be below the plan-based threshold of 6.6 metric tons CO_2e per service population per year for use in the South Coast region. Impacts would be less than significant.

Table 10
Greenhouse Gases Emissions by Service Population

Total GHG Emissions	121,470 metric tons CO_2e
Total Service Population	25,889 residents and employees
Emissions per SP per year	**4.7 MT CO_2e/SP/Year**

Consistency with Applicable Mitigation Strategies

The proposed General Plan Update land use plan promotes sustainable development such as centralized land uses, mixed uses, and preservation of open spaces. The Land Use Element establishes a new Mixed-Use land use category intended to create a diverse, pedestrian-friendly, transit-accessible neighborhood. The proposed General Plan Update contains numerous goals, policies, and actions that would directly or indirectly reduce GHG emissions.

The Conservation Element includes specific goals and policies related to greenhouse gas emissions:

Goals

Goal CN-3 *Promote Sustainable Practices that Conserve Natural Resources and Reduce Greenhouse Gas Emissions*

Policies and Actions

Policy CN-3.1 *Endorse Green building design in new and existing construction*

Action CN-3.1.1 *Implement Green building policies that promote increased use of energy efficiency, alternative energy, recycled materials, renewable resources, local materials, water efficiency, and pollution reduction.*

Action CN-3.1.2 *Establish programs that encourage homeowners to reduce energy consumption.*

Action CN-3.1.3 *Seek available funding sources which can be applied toward green building programs.*

Action CN-3.1.4 *Coordinate with state and regional agencies to ensure that alternative energy facilities are compatible with Chino Hills' natural and built environment.*

Policy CN-3.2 *Develop and implement a Climate Action Plan facilitating the reduction of greenhouse gas emissions*

Action CN-3.2.1 Reduce Greenhouse Gas emissions in City operations.

Action CN-3.2.2 Power City vehicles and equipment with reduced carbon dioxide emission fuels.

Action CN-3.2.3 Provide Climate Action Plan information and resources to the Chino Hills community.

Senate Bill 375, signed in August 2008, requires the inclusion of sustainable communities' strategies (SCS) in regional transportation plans (RTPs) for the purpose of reducing GHG emissions. In April 2012, the Southern California Association of Government (SCAG) adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The primary goal of the RTP/SCS is to provide a vision for future growth in Southern California that will reduce per capita GHG emissions by 8% by 2020 and 13% by 2035.

The consistency of the General Plan Update with applicable policies from SCAG's RTP/SCS is evaluated in Table 11. As shown, the General Plan Update would be consistent with all of the strategies identified below to reduce GHG emissions in the SCAG region, and these policies would help maintain or reduce per capita emissions in Chino Hills. Impacts would be less than significant.

Table 11
General Plan Update Consistency with SCAG 2012-2035 RTP/SCS

2012-2035 RTP/SCS	General Plan Update Policies
GOALS	
Better Placemaking Create better places to live and work through compact development, varied housing options, bike and pedestrian improvements, and efficient transportation infrastructure in order to reduce travel time and relieve road congestion.	**Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Action LU-5.1.3:** Coordinate land use patterns with transportation plans to improve and protect air quality, and reduce vehicular trips. **Action LU-5.1.4:** Plan for high density residential and mixed use development near commercial areas, major roadways and transit facilities. **Action LU-5.1.5:** Encourage development to incorporate pedestrian and bicycle trails, fitness areas and/or other facilities that promote healthy living.
Lower Cost to Taxpayers and Families Reduce the cost of development for taxpayers and reduce the everyday costs of housing and transportation by creating more compact neighborhoods and placing everyday destinations closer to homes and closer to one another.	**Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Action LU-5.1.1**: Identify sites suitable for mixed-use development within an existing urban service area and establish appropriate site specific standards to accommodate the mixed uses. **Action LU-5.1.3:** Coordinate land use patterns with transportation plans to improve and protect air quality, and reduce vehicular trips. **Action LU-5.1.4:** Plan for high density residential and mixed use development near commercial areas, major roadways and transit facilities.

Table 11
General Plan Update Consistency with SCAG 2012-2035 RTP/SCS

2012-2035 RTP/SCS	General Plan Update Policies
Benefits to Public Health and the Environment Better placemaking will encourage an active lifestyle and reduce impacts to natural environments.	**Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Action LU-5.1.5:** Encourage development to incorporate pedestrian and bicycle trails, fitness areas and/or other facilities that promote healthy living. **Goal CN-3:** Promote Sustainable Practices that Conserve Natural Resources and Reduce Greenhouse Gas Emissions **Action LU-3.2.3:** Provide sidewalks along all streets in residential neighborhoods; and where possible, provide sidewalks in internal green belts.
Greater Responsiveness to Demographics and the Changing Housing Market Strategies focused on high-quality places, compact infill development, and more housing and transportation choices will be responsive to newly emerging market forces.	**Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Goal CIRC-3:** Provide Safe And Adequate Pedestrian, Bicycle, and Public Transportation Systems to Provide Alternatives to Single Occupant Vehicular Travel and to Support Land Uses.
Improved Access and Mobility Placing destinations closer together and increasing alternative transportation options to decrease the time and cost of traveling between destinations.	**Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones.
STRATEGIES	
A Land Use growth pattern that accommodates the region's future employment and housing needs and protects sensitive habitat and natural resource areas.	**Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Goal CN-3:** Promote Sustainable Practices that Conserve Natural Resources and Reduce Greenhouse Gas Emissions
A Transportation Network that consists of public transit, highways, local streets, bikeways, and walkways.	**Goal CIRC-3:** Provide Safe And Adequate Pedestrian, Bicycle, and Public Transportation Systems to Provide Alternatives to Single Occupant Vehicular Travel and to Support Land Uses. **Policy CIRC-3.1:** Encourage the use of public transportation for commute and local, and increase citywide transit ridership. **Policy CIRC-3.2:** Support other alternatives to single occupant vehicular travel. **Action CIRC-3.2.3:** Support the citywide Bicycle Master Plan and bikeway improvements.
Transportation System Management (TSM) measures that maximize the efficiency of the transportation network.	**Policy CIRC-2.1:** Support and participate in regional efforts to improve vehicular and non-vehicular transportation systems. **Action CIRC-2.1.2:** Coordinate with SANBAG regarding the integration of Intelligent Transportation Systems (ITS) that will maximize the efficiency of the transportation system through advanced technologies, such as adaptive signal controls. **Policy CIRC-3.1:** Encourage the use of public transportation for commute and local, and increase citywide transit ridership.

Source: Southern California Association of Governments, 2012-2035 RTP/SCS

As discussed in the *Regulatory Setting* section, in response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006, published the Climate Action Team Report (CAT Report) (CalEPA, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions.

In addition, in 2008 the California Attorney General published "The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level" (Office of the California Attorney General, Global Warming Measures Updated May 21, 2008). This document provides information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming. Included in this document are various measures that may reduce the global warming related impacts of a project.

Tables 12 and 13 illustrate that the proposed General Plan Update would be consistent with the applicable GHG reduction strategies set forth by the 2006 CAT Report as well as the 2008 Attorney General's Greenhouse Gas Reduction Measures.

Table 12
Consistency with Applicable Climate Action Team
Greenhouse Gas Emission Reduction Strategies

Strategy	***Project Consistency***
California Air Resources Board	
Vehicle Climate Change Standards AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.	**Consistent** The vehicles that travel to and from the Chino Hills on public roadways would be in compliance with ARB vehicle standards that are in effect at the time of vehicle purchase.
Diesel Anti-Idling The ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling in July 2004.	**Consistent** Current State law restricts diesel truck idling to five minutes or less. Diesel trucks operating from and making deliveries to the Chino Hills are subject to this state-wide law. In addition, vehicles hauling exported material from construction sites associated with development projects facilitated by the General Plan Update would not idle at the project site, those vehicles would pick-up the materials to be exported and leave the site.
Hydrofluorocarbon Reduction 1) Ban retail sale of HFC in small cans. 2) Require that only low GWP refrigerants be used in new vehicular systems. 3) Adopt specifications for new commercial refrigeration. 4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs. 5) Enforce federal ban on releasing HFCs.	**Consistent** This strategy applies to consumer products. All applicable products would be required to comply with the regulations that are in effect at the time of manufacture.
Alternative Fuels: Biodiesel Blends ARB would develop regulations to require the use of 1 to 4% biodiesel displacement of California diesel fuel.	**Consistent** Diesel vehicles such as delivery trucks that travel to and from the Chino Hills on public roadways could utilize this fuel once it is commercially available.

Table 12
Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	*Project Consistency*
Alternative Fuels: Ethanol Increased use of E-85 fuel.	**Consistent** Residents and visitors in Chino Hills could choose to purchase flex-fuel vehicles and utilize this fuel once it is commercially available regionally and locally.
Heavy-Duty Vehicle Emission Reduction Measures Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.	**Consistent** Heavy-duty vehicles for the exported material hauling activities that travel to and from Chino Hills on public roadways would be subject to all applicable ARB efficiency standards that are in effect at the time of vehicle manufacture.
Achieve 50% Statewide Recycling Goal Achieving the State's 50% waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 52% has been achieved on a statewide basis.	**Consistent** The City of Chino Hills is responsible for complying with AB 939. The City has consistently met its goals for solid waste diversion, and achieved a diversion rate of 64% in 2011 (ChinoHills.com, 2011). It is anticipated that development facilitated by the General Plan Update would participate in the City's waste diversion programs and would similarly divert at least 50% of solid waste. Individual projects would also be subject to all applicable State and County requirements for solid waste reduction as they change in the future. Further, the General Plan Update contains goals, policies, and actions intended to reduce solid waste: **Goal CN-5:** Provide for Adequate and Efficient Solid Waste **Policy CN-5**: Meet the City's solid waste disposal needs, while maximizing opportunities for waste reduction and recycling. **Action CN-5.1.1:** Implement the City's Source Reduction and Recycling Element as required by the California Integrated Waste Management Act. **Action CN-5.1.2:** Publicize and educate the public about waste reduction techniques and facilities.
Department of Water Resources	
Water Use Efficiency Approximately 19% of all electricity, 30% of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	**Consistent** The proposed General Plan Update includes policies and actions to reduce water use: **Policy CN-4.1:** Promote water conservation **Action CN-4.1.1:** Continue to implement water conservation programs to sustain potable water sources. **Action CN-4.1.2:** Promote use of drought tolerant plant materials and low water usage irrigation systems. **Action CN-4.1.3:** Promote low water use plantings and materials in City street medians and parkways.

Table 12
Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	*Project Consistency*
	Action CN-4.1.4: Continue to use reclaimed water for non-potable water supplies wherever not precluded by public health considerations.
Energy Commission (CEC)	
Building Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	**Consistent** The proposed project would involve physical development that would need to comply with the standards of Title 24 that are in effect at the time of development. The proposed General Plan Update also includes policies and actions to encourage energy efficiency: **Policy CN-3.1:** Endorse Green building design in new and existing construction **Action CN-3.1.1**: Implement Green building policies that promote increased use of energy efficiency, alternative energy, recycled materials, renewable resources, local materials, water efficiency, and pollution reduction. **Action CN-3.1.2**: Establish programs that encourage homeowners to reduce energy consumption. **Action CN-3.1.3:** Seek available funding sources which can be applied toward green building programs.
Appliance Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	**Consistent** Under State law, appliances that are purchased would be consistent with energy efficiency standards that are in effect at the time of manufacture.
Fuel-Efficient Replacement Tires & Inflation Programs State legislation established a statewide program to encourage the production and use of more efficient tires.	**Consistent** Residents at and visitors to Chino Hills could purchase tires for their vehicles that comply with state programs for increased fuel efficiency.
Alternative Fuels: Non-Petroleum Fuels Increasing the use of non-petroleum fuels in California's transportation sector, as recommended as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.	**Consistent** Residents and visitors of Chino Hills could purchase alternative fuel vehicles and utilize these fuels once they are commercially available regionally and locally.
Green Buildings Initiative Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20% by the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20% target.	**Consistent** The General Plan Update would facilitate physical development that would need to comply with the standards of Title 24 that are in effect at the time of development. See also discussion under "Building Energy Efficiency Standards in Place and in Progress" for General Plan Update policies and actions related to green building.

Table 12
Consistency with Applicable Climate Action Team Greenhouse Gas Emission Reduction Strategies

Strategy	*Project Consistency*
Business, Transportation and Housing	
Smart Land Use and Intelligent Transportation Systems (ITS) Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors.	**Consistent** The General Plan Update includes goals, strategies, and actions to encourage smart land use strategies: **Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Action LU-5.1.1**: Identify sites suitable for mixed-use development within an existing urban service area and establish appropriate site specific standards to accommodate the mixed uses. **Action LU-5.1.3:** Coordinate land use patterns with transportation plans to improve and protect air quality, and reduce vehicular trips. **Action LU-5.1.4:** Plan for high density residential and mixed use development near commercial areas, major roadways and transit facilities.

Table 13
Project Consistency with Applicable Attorney General Greenhouse Gas Emission Reduction Measures

Strategy	*Project Consistency*
Transportation-Related Emissions	
Diesel Anti-Idling Set specific limits on idling time for commercial vehicles, including delivery vehicles.	**Consistent** Currently, the California Air Resources Board's (CARB) Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling restricts diesel truck idling to five minutes or less. Diesel trucks making deliveries to Chino Hills are subject to this state-wide law. In addition, vehicles hauling exported material off-site would not idle at the site; instead, those vehicles would pick-up the materials and leave the site.
Transportation Emissions Reduction Provide shuttle service to public transportation.	**Consistent** The General Plan Update includes goals, strategies, and actions to encourage alternative transportation: **Goal CIRC-3:** Provide Safe And Adequate Pedestrian, Bicycle, and Public Transportation Systems to Provide Alternatives to Single Occupant Vehicular Travel and to Support Land Uses. **Policy CIRC-3.1:** Encourage the use of public transportation for commute and local, and increase citywide transit ridership. **Policy CIRC-3.2:** Support other alternatives to single occupant vehicular travel.
Solid Waste and Energy Emissions	
Solid Waste Reduction Strategy Project construction shall require reuse and recycling of construction and demolition waste.	**Consistent** Individual projects facilitated by the General Plan Update would be required to comply with the 50% waste diversion mandate, as required by the Integrated Waste Management Act of 1989.
Water Use Efficiency Require measures that reduce the amount of water sent to the sewer system – see examples in CAT standard above. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.	**Consistent** The proposed General Plan Update includes policies and actions to reduce water use: **Policy CN-4.1:** Promote water conservation **Action CN-4.1.1:** Continue to implement water conservation programs to sustain potable water sources. **Action CN-4.1.2:** Promote use of drought tolerant plant materials and low water usage irrigation systems. **Action CN-4.1.3:** Promote low water use plantings and materials in City street medians and parkways. **Action CN-4.1.4:** Continue to use reclaimed water for non-potable water supplies wherever not precluded by public health considerations.
Land Use Measures, Smart Growth Strategies and Carbon Offsets	
Smart Land Use and Intelligent Transportation Systems Require pedestrian-only streets and plazas within the project site and destinations that may be reached conveniently by public transportation, walking or bicycling.	**Consistent** The General Plan Update includes policies and actions to encourage alternative transportation: **Policy LU-5.1:** Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed use zones. **Action LU-5.1.5:** Encourage development to incorporate pedestrian and bicycle trails, fitness areas and/or other

Table 13
Project Consistency with Applicable Attorney General
Greenhouse Gas Emission Reduction Measures

Strategy	*Project Consistency*
	facilities that promote healthy living. **Action LU-3.2.3:** Provide sidewalks along all streets in residential neighborhoods; and where possible, provide sidewalks in internal green belts. **Policy CIRC-3.1:** Encourage the use of public transportation for commute and local, and increase citywide transit ridership. **Action CIRC-3.2.3:** Support the citywide Bicycle Master Plan and bikeway improvements..

As indicated in Tables 11, 12 and 13, the proposed project would be consistent with SCAG's RTP/SCS, CAT strategies and the 2008 Attorney General Greenhouse Gas Reduction Measures.

The General Plan Update would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs and would be consistent with the objectives of AB 32, EO S-3-05, SB 375, and SB 97. Further, as indicated in Table 10, the increase of GHG emissions associated with the General Plan Update would be approximately 4.7 MT CO_2e/SP/year which would not exceed the SCAQMD's recommended 6.6 MT CO_2e/SP/year screening threshold. Therefore, GHG emissions from the proposed General Plan Update would be less than significant.

Cumulative Analysis

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Therefore, the analysis of the General Plan Update's impacts also constitutes the cumulative analysis and this GHG analysis does not contain a separate analysis of cumulative impacts. In accordance with SCAQMD methodology, projects that do not exceed or can be mitigated to less than the threshold values, especially the estimated greenhouse gas emissions per service population, do not add significantly to a cumulative impact. Because GHG emissions from the proposed General Plan Update would be less than significant, cumulative impacts associated with GHG emissions also would be less than significant.

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Appendix

CalEEMod GHG Modeling Results

N_2O from Mobile Emissions GHG Calculation Worksheet

Chino Hills General Plan Update

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	357.52	1000sqft	8.21	357,521.00	0
Office Park	369.00	1000sqft	8.47	369,000.00	0
Apartments Mid Rise	2,768.00	Dwelling Unit	72.84	2,768,000.00	7916
Single Family Housing	3,054.00	Dwelling Unit	991.56	5,497,200.00	8734
Strip Mall	1,384.01	1000sqft	31.77	1,384,012.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	10			**Operational Year**	2035
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - GP update involves 2,768 multi-family units, 3,054 single-family units, 33,087 sf of mixed use (strip mall), 1,350,925 sf of commercial (strip mall), 369,000 sf of business park (office park), 357,521 sf of institutional/public facility (general office).

Construction Phase - Estimated 20 year construction schedule

Architectural Coating - Per SCAQMD Rule 1113

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Waste Mitigation -

Area Coating - Per SCAQMD Rule 1113

Area Mitigation - Per SCAQMD Rule 1113

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	150
tblConstructionPhase	NumDays	11,000.00	390.00
tblConstructionPhase	NumDays	155,000.00	4,000.00
tblConstructionPhase	NumDays	10,000.00	200.00
tblConstructionPhase	NumDays	15,500.00	300.00
tblConstructionPhase	NumDays	11,000.00	200.00
tblConstructionPhase	NumDays	6,000.00	120.00
tblGrading	AcresOfGrading	750.00	38,750.00
tblLandUse	LandUseSquareFeet	357,520.00	357,521.00
tblLandUse	LandUseSquareFeet	1,384,010.00	1,384,012.00
tblProjectCharacteristics	OperationalYear	2014	2035

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.6212	6.5859	5.0583	5.4700e-003	1.1064	0.3395	1.4459	0.6018	0.3154	0.9173	0.0000	510.8473	510.8473	0.1368	0.0000	513.7203
2016	0.8153	9.1841	6.3452	7.7400e-003	22.5624	0.4490	23.0114	3.3184	0.4131	3.7315	0.0000	723.8416	723.8416	0.2117	0.0000	728.2864
2017	2.3907	13.8520	30.9744	0.0650	25.2868	0.4338	25.7206	3.7435	0.4019	4.1454	0.0000	5,161.9718	5,161.9718	0.3168	0.0000	5,168.6236
2018	3.0465	15.2884	42.6780	0.0996	6.1635	0.3889	6.5524	1.6523	0.3619	2.0142	0.0000	7,618.2132	7,618.2132	0.3499	0.0000	7,625.5607
2019	2.8109	14.0210	39.9336	0.0992	6.1637	0.3531	6.5168	1.6523	0.3286	1.9809	0.0000	7,373.5494	7,373.5494	0.3315	0.0000	7,380.5103
2020	2.6487	12.5314	37.9819	0.0996	6.1874	0.3194	6.5068	1.6587	0.2971	1.9558	0.0000	7,154.9430	7,154.9430	0.3188	0.0000	7,161.6387
2021	2.4978	10.9430	36.0539	0.0993	6.1638	0.2861	6.4499	1.6524	0.2661	1.9184	0.0000	7,055.3599	7,055.3599	0.3071	0.0000	7,061.8086
2022	2.3677	9.9269	34.2518	0.0989	6.1402	0.2641	6.4043	1.6460	0.2455	1.8916	0.0000	6,953.0919	6,953.0919	0.2965	0.0000	6,959.3181
2023	2.2185	8.4190	32.5738	0.0987	6.1402	0.2483	6.3886	1.6460	0.2307	1.8767	0.0000	6,874.7772	6,874.7772	0.2859	0.0000	6,880.7813
2024	2.1461	8.2333	31.5961	0.1000	6.1875	0.2395	6.4269	1.6587	0.2223	1.8810	0.0000	6,901.0475	6,901.0475	0.2826	0.0000	6,906.9828
2025	2.0552	7.9548	30.3975	0.0996	6.1639	0.2280	6.3919	1.6524	0.2115	1.8639	0.0000	6,819.8294	6,819.8294	0.2749	0.0000	6,825.6033
2026	1.9803	7.7362	29.4217	0.0996	6.1639	0.2234	6.3873	1.6524	0.2073	1.8597	0.0000	6,770.9831	6,770.9831	0.2689	0.0000	6,776.6298
2027	1.9246	7.6302	28.6191	0.0996	6.1639	0.2238	6.3877	1.6524	0.2077	1.8601	0.0000	6,728.7583	6,728.7583	0.2639	0.0000	6,734.3010
2028	1.8643	7.4954	27.8075	0.0992	6.1403	0.2224	6.3627	1.6461	0.2064	1.8524	0.0000	6,666.5493	6,666.5493	0.2585	0.0000	6,671.9768
2029	1.8190	7.4399	27.1941	0.0996	6.1640	0.2234	6.3874	1.6524	0.2073	1.8597	0.0000	6,660.3936	6,660.3936	0.2551	0.0000	6,665.7507

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	1.7617	6.7750	26.5915	0.1001	6.1640	0.1743	6.3383	1.6524	0.1622	1.8147	0.0000	6,673.0275	6,673.0275	0.1940	0.0000	6,677.1009
2031	1.7175	6.7050	26.0582	0.1003	6.1640	0.1738	6.3378	1.6524	0.1618	1.8142	0.0000	6,658.2613	6,658.2613	0.1908	0.0000	6,662.2684
2032	1.2364	4.9776	18.7506	0.0722	4.3754	0.1357	4.5111	1.1729	0.1272	1.3001	0.0000	4,800.8391	4,800.8391	0.1373	0.0000	4,803.7214
2033	16.6849	0.6091	2.4226	9.2600e-003	0.5761	0.0263	0.6023	0.1530	0.0259	0.1789	0.0000	585.6778	585.6778	0.0241	0.0000	586.1829
2034	30.6491	0.3213	2.5995	0.0137	1.0452	0.0115	1.0567	0.2776	0.0109	0.2885	0.0000	797.2156	797.2156	0.0308	0.0000	797.8617
Total	**83.2562**	**166.6293**	**517.3091**	**1.5667**	**141.2227**	**4.9642**	**146.1870**	**32.3941**	**4.6109**	**37.0051**	**0.0000**	**109,489.1778**	**109,489.1778**	**4.7357**	**0.0000**	**109,588.6276**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.6212	6.5859	5.0583	5.4700e-003	0.5102	0.3395	0.8497	0.2741	0.3154	0.5895	0.0000	510.8467	510.8467	0.1368	0.0000	513.7197
2016	0.8153	9.1841	6.3452	7.7400e-003	10.1685	0.4490	10.6174	1.4974	0.4131	1.9104	0.0000	723.8408	723.8408	0.2117	0.0000	728.2856
2017	2.3907	13.8520	30.9744	0.0650	13.4890	0.4338	13.9228	2.2502	0.4019	2.6521	0.0000	5,161.9712	5,161.9712	0.3168	0.0000	5,168.6230
2018	3.0465	15.2884	42.6780	0.0996	6.1635	0.3889	6.5524	1.6523	0.3619	2.0142	0.0000	7,618.2129	7,618.2129	0.3499	0.0000	7,625.5603
2019	2.8109	14.0210	39.9336	0.0992	6.1637	0.3531	6.5168	1.6523	0.3286	1.9809	0.0000	7,373.5491	7,373.5491	0.3315	0.0000	7,380.5100
2020	2.6487	12.5314	37.9819	0.0996	6.1874	0.3194	6.5068	1.6587	0.2971	1.9558	0.0000	7,154.9427	7,154.9427	0.3188	0.0000	7,161.6383
2021	2.4978	10.9430	36.0539	0.0993	6.1638	0.2861	6.4499	1.6524	0.2661	1.9184	0.0000	7,055.3595	7,055.3595	0.3071	0.0000	7,061.8082

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	2.3677	9.9269	34.2518	0.0989	6.1402	0.2641	6.4043	1.6460	0.2455	1.8916	0.0000	6,953.0915	6,953.0915	0.2965	0.0000	6,959.3177
2023	2.2185	8.4190	32.5738	0.0987	6.1402	0.2483	6.3886	1.6460	0.2307	1.8767	0.0000	6,874.7768	6,874.7768	0.2859	0.0000	6,880.7809
2024	2.1461	8.2333	31.5961	0.1000	6.1875	0.2395	6.4269	1.6587	0.2223	1.8810	0.0000	6,901.0472	6,901.0472	0.2826	0.0000	6,906.9824
2025	2.0552	7.9548	30.3975	0.0996	6.1639	0.2280	6.3919	1.6524	0.2115	1.8639	0.0000	6,819.8291	6,819.8291	0.2749	0.0000	6,825.6029
2026	1.9803	7.7362	29.4217	0.0996	6.1639	0.2234	6.3873	1.6524	0.2073	1.8597	0.0000	6,770.9827	6,770.9827	0.2689	0.0000	6,776.6295
2027	1.9246	7.6302	28.6191	0.0996	6.1639	0.2238	6.3877	1.6524	0.2077	1.8601	0.0000	6,728.7579	6,728.7579	0.2639	0.0000	6,734.3006
2028	1.8643	7.4954	27.8075	0.0992	6.1403	0.2224	6.3627	1.6461	0.2064	1.8524	0.0000	6,666.5489	6,666.5489	0.2585	0.0000	6,671.9765
2029	1.8190	7.4399	27.1941	0.0996	6.1640	0.2234	6.3874	1.6524	0.2073	1.8597	0.0000	6,660.3932	6,660.3932	0.2551	0.0000	6,665.7503
2030	1.7617	6.7750	26.5915	0.1001	6.1640	0.1743	6.3383	1.6524	0.1622	1.8147	0.0000	6,673.0271	6,673.0271	0.1940	0.0000	6,677.1004
2031	1.7175	6.7050	26.0582	0.1003	6.1640	0.1738	6.3378	1.6524	0.1618	1.8142	0.0000	6,658.2609	6,658.2609	0.1908	0.0000	6,662.2680
2032	1.2364	4.9776	18.7506	0.0722	4.3754	0.1357	4.5111	1.1729	0.1272	1.3001	0.0000	4,800.8387	4,800.8387	0.1373	0.0000	4,803.7210
2033	16.6849	0.6091	2.4226	9.2600e-003	0.5761	0.0263	0.6023	0.1530	0.0259	0.1789	0.0000	585.6776	585.6776	0.0241	0.0000	586.1828
2034	30.6491	0.3213	2.5995	0.0137	1.0452	0.0115	1.0567	0.2776	0.0109	0.2885	0.0000	797.2156	797.2156	0.0308	0.0000	797.8617
Total	**83.2562**	**166.6293**	**517.3091**	**1.5667**	**116.4348**	**4.9642**	**121.3990**	**28.7520**	**4.6109**	**33.3630**	**0.0000**	**109,489.1701**	**109,489.1701**	**4.7357**	**0.0000**	**109,588.6198**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**17.55**	**0.00**	**16.96**	**11.24**	**0.00**	**9.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	63.7871	1.1743	96.4358	0.0614		5.8922	5.8922		5.8913	5.8913	618.4074	1,286.4938	1,904.9012	1.9377	0.0420	1,958.6047
Energy	0.7655	6.5584	2.9056	0.0418		0.5289	0.5289		0.5289	0.5289	0.0000	25,814.6166	25,814.6166	0.9836	0.3124	25,932.1004
Mobile	37.4620	94.1154	415.6377	1.7432	109.8691	2.5118	112.3809	29.4625	2.3179	31.7804	0.0000	113,703.9847	113,703.9847	3.0549	0.0000	113,768.1376
Waste						0.0000	0.0000		0.0000	0.0000	1,417.5042	0.0000	1,417.5042	83.7721	0.0000	3,176.7182
Water						0.0000	0.0000		0.0000	0.0000	193.8329	3,488.2756	3,682.1085	20.0688	0.5033	4,259.5640
Total	**102.0146**	**101.8482**	**514.9791**	**1.8464**	**109.8691**	**8.9330**	**118.8020**	**29.4625**	**8.7382**	**38.2007**	**2,229.7445**	**144,293.3707**	**146,523.1151**	**109.8171**	**0.8576**	**149,095.1249**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	43.9837	0.6905	59.8560	3.1700e-003		0.3331	0.3331		0.3331	0.3331	0.0000	98.1272	98.1272	0.0935	0.0000	100.0906
Energy	0.7655	6.5584	2.9056	0.0418		0.5289	0.5289		0.5289	0.5289	0.0000	25,814.6166	25,814.6166	0.9836	0.3124	25,932.1004
Mobile	34.0335	72.0909	339.2678	1.2215	75.8714	1.8044	77.6758	20.3457	1.6653	22.0110	0.0000	79,676.1425	79,676.1425	2.1784	0.0000	79,721.8891
Waste						0.0000	0.0000		0.0000	0.0000	708.7521	0.0000	708.7521	41.8861	0.0000	1,588.3591
Water						0.0000	0.0000		0.0000	0.0000	193.8329	3,488.2756	3,682.1085	20.0652	0.5025	4,259.2548
Total	**78.7828**	**79.3399**	**402.0294**	**1.2664**	**75.8714**	**2.6663**	**78.5377**	**20.3457**	**2.5273**	**22.8730**	**902.5850**	**109,077.1618**	**109,979.7468**	**65.2067**	**0.8149**	**111,601.6939**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**22.77**	**22.10**	**21.93**	**31.41**	**30.94**	**70.15**	**33.89**	**30.94**	**71.08**	**40.12**	**59.52**	**24.41**	**24.94**	**40.62**	**4.98**	**25.15**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	10/7/2015	5	200	
2	Site Preparation	Site Preparation	10/8/2015	3/23/2016	5	120	
3	Grading	Grading	3/24/2016	5/17/2017	5	300	
4	Building Construction	Building Construction	5/18/2017	9/15/2032	5	4000	
5	Paving	Paving	9/16/2032	6/22/2033	5	200	
6	Architectural Coating	Architectural Coating	6/23/2033	12/20/2034	5	390	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 38750

Acres of Paving: 0

Residential Indoor: 16,737,030; Residential Outdoor: 5,579,010; Non-Residential Indoor: 3,165,800; Non-Residential Outdoor: 1,055,267 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3,768.00	968.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	754.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4508	4.8363	3.6074	3.9900e-003		0.2451	0.2451		0.2286	0.2286	0.0000	374.4127	374.4127	0.1015	0.0000	376.5441
Total	**0.4508**	**4.8363**	**3.6074**	**3.9900e-003**		**0.2451**	**0.2451**		**0.2286**	**0.2286**	**0.0000**	**374.4127**	**374.4127**	**0.1015**	**0.0000**	**376.5441**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2700e-003	0.0106	0.1103	2.1000e-004	0.0164	1.7000e-004	0.0166	4.3700e-003	1.5000e-004	4.5200e-003	0.0000	16.5931	16.5931	9.9000e-004	0.0000	16.6138
Total	**7.2700e-003**	**0.0106**	**0.1103**	**2.1000e-004**	**0.0164**	**1.7000e-004**	**0.0166**	**4.3700e-003**	**1.5000e-004**	**4.5200e-003**	**0.0000**	**16.5931**	**16.5931**	**9.9000e-004**	**0.0000**	**16.6138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4508	4.8363	3.6074	3.9900e-003		0.2451	0.2451		0.2286	0.2286	0.0000	374.4122	374.4122	0.1015	0.0000	376.5437
Total	**0.4508**	**4.8363**	**3.6074**	**3.9900e-003**		**0.2451**	**0.2451**		**0.2286**	**0.2286**	**0.0000**	**374.4122**	**374.4122**	**0.1015**	**0.0000**	**376.5437**

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2700e-003	0.0106	0.1103	2.1000e-004	0.0164	1.7000e-004	0.0166	4.3700e-003	1.5000e-004	4.5200e-003	0.0000	16.5931	16.5931	9.9000e-004	0.0000	16.6138
Total	**7.2700e-003**	**0.0106**	**0.1103**	**2.1000e-004**	**0.0164**	**1.7000e-004**	**0.0166**	**4.3700e-003**	**1.5000e-004**	**4.5200e-003**	**0.0000**	**16.5931**	**16.5931**	**9.9000e-004**	**0.0000**	**16.6138**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1605	1.7351	1.3003	1.1900e-003		0.0942	0.0942		0.0867	0.0867	0.0000	113.7684	113.7684	0.0340	0.0000	114.4817
Total	**0.1605**	**1.7351**	**1.3003**	**1.1900e-003**	**1.0840**	**0.0942**	**1.1782**	**0.5958**	**0.0867**	**0.6825**	**0.0000**	**113.7684**	**113.7684**	**0.0340**	**0.0000**	**114.4817**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6600e-003	3.8700e-003	0.0404	8.0000e-005	6.0200e-003	6.0000e-005	6.0800e-003	1.6000e-003	6.0000e-005	1.6500e-003	0.0000	6.0731	6.0731	3.6000e-004	0.0000	6.0807
Total	**2.6600e-003**	**3.8700e-003**	**0.0404**	**8.0000e-005**	**6.0200e-003**	**6.0000e-005**	**6.0800e-003**	**1.6000e-003**	**6.0000e-005**	**1.6500e-003**	**0.0000**	**6.0731**	**6.0731**	**3.6000e-004**	**0.0000**	**6.0807**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4878	0.0000	0.4878	0.2681	0.0000	0.2681	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1605	1.7351	1.3003	1.1900e-003		0.0942	0.0942		0.0867	0.0867	0.0000	113.7683	113.7683	0.0340	0.0000	114.4815
Total	**0.1605**	**1.7351**	**1.3003**	**1.1900e-003**	**0.4878**	**0.0942**	**0.5820**	**0.2681**	**0.0867**	**0.3548**	**0.0000**	**113.7683**	**113.7683**	**0.0340**	**0.0000**	**114.4815**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6600e-003	3.8700e-003	0.0404	8.0000e-005	6.0200e-003	6.0000e-005	6.0800e-003	1.6000e-003	6.0000e-005	1.6500e-003	0.0000	6.0731	6.0731	3.6000e-004	0.0000	6.0807
Total	**2.6600e-003**	**3.8700e-003**	**0.0404**	**8.0000e-005**	**6.0200e-003**	**6.0000e-005**	**6.0800e-003**	**1.6000e-003**	**6.0000e-005**	**1.6500e-003**	**0.0000**	**6.0731**	**6.0731**	**3.6000e-004**	**0.0000**	**6.0807**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1498	1.6117	1.2126	1.1500e-003		0.0867	0.0867		0.0798	0.0798	0.0000	108.7875	108.7875	0.0328	0.0000	109.4766
Total	**0.1498**	**1.6117**	**1.2126**	**1.1500e-003**	**1.0840**	**0.0867**	**1.1707**	**0.5958**	**0.0798**	**0.6756**	**0.0000**	**108.7875**	**108.7875**	**0.0328**	**0.0000**	**109.4766**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3200e-003	3.3900e-003	0.0353	7.0000e-005	5.8200e-003	6.0000e-005	5.8700e-003	1.5500e-003	5.0000e-005	1.6000e-003	0.0000	5.6779	5.6779	3.2000e-004	0.0000	5.6846
Total	**2.3200e-003**	**3.3900e-003**	**0.0353**	**7.0000e-005**	**5.8200e-003**	**6.0000e-005**	**5.8700e-003**	**1.5500e-003**	**5.0000e-005**	**1.6000e-003**	**0.0000**	**5.6779**	**5.6779**	**3.2000e-004**	**0.0000**	**5.6846**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4878	0.0000	0.4878	0.2681	0.0000	0.2681	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1498	1.6117	1.2126	1.1500e-003		0.0867	0.0867		0.0798	0.0798	0.0000	108.7873	108.7873	0.0328	0.0000	109.4764
Total	**0.1498**	**1.6117**	**1.2126**	**1.1500e-003**	**0.4878**	**0.0867**	**0.5745**	**0.2681**	**0.0798**	**0.3479**	**0.0000**	**108.7873**	**108.7873**	**0.0328**	**0.0000**	**109.4764**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3200e-003	3.3900e-003	0.0353	7.0000e-005	5.8200e-003	6.0000e-005	5.8700e-003	1.5500e-003	5.0000e-005	1.6000e-003	0.0000	5.6779	5.6779	3.2000e-004	0.0000	5.6846
Total	**2.3200e-003**	**3.3900e-003**	**0.0353**	**7.0000e-005**	**5.8200e-003**	**6.0000e-005**	**5.8700e-003**	**1.5500e-003**	**5.0000e-005**	**1.6000e-003**	**0.0000**	**5.6779**	**5.6779**	**3.2000e-004**	**0.0000**	**5.6846**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					21.4505	0.0000	21.4505	2.7152	0.0000	2.7152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6544	7.5562	4.9629	6.2300e-003		0.3620	0.3620		0.3331	0.3331	0.0000	587.7768	587.7768	0.1773	0.0000	591.5000
Total	**0.6544**	**7.5562**	**4.9629**	**6.2300e-003**	**21.4505**	**0.3620**	**21.8125**	**2.7152**	**0.3331**	**3.0482**	**0.0000**	**587.7768**	**587.7768**	**0.1773**	**0.0000**	**591.5000**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8200e-003	0.0129	0.1344	2.8000e-004	0.0221	2.1000e-004	0.0224	5.8800e-003	2.0000e-004	6.0800e-003	0.0000	21.5994	21.5994	1.2300e-003	0.0000	21.6252
Total	**8.8200e-003**	**0.0129**	**0.1344**	**2.8000e-004**	**0.0221**	**2.1000e-004**	**0.0224**	**5.8800e-003**	**2.0000e-004**	**6.0800e-003**	**0.0000**	**21.5994**	**21.5994**	**1.2300e-003**	**0.0000**	**21.6252**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.6527	0.0000	9.6527	1.2218	0.0000	1.2218	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6544	7.5562	4.9629	6.2300e-003		0.3620	0.3620		0.3331	0.3331	0.0000	587.7761	587.7761	0.1773	0.0000	591.4993
Total	**0.6544**	**7.5562**	**4.9629**	**6.2300e-003**	**9.6527**	**0.3620**	**10.0147**	**1.2218**	**0.3331**	**1.5549**	**0.0000**	**587.7761**	**587.7761**	**0.1773**	**0.0000**	**591.4993**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8200e-003	0.0129	0.1344	2.8000e-004	0.0221	2.1000e-004	0.0224	5.8800e-003	2.0000e-004	6.0800e-003	0.0000	21.5994	21.5994	1.2300e-003	0.0000	21.6252
Total	**8.8200e-003**	**0.0129**	**0.1344**	**2.8000e-004**	**0.0221**	**2.1000e-004**	**0.0224**	**5.8800e-003**	**2.0000e-004**	**6.0800e-003**	**0.0000**	**21.5994**	**21.5994**	**1.2300e-003**	**0.0000**	**21.6252**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					21.4505	0.0000	21.4505	2.7152	0.0000	2.7152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2989	3.4100	2.2935	3.0200e-003		0.1625	0.1625		0.1495	0.1495	0.0000	280.6422	280.6422	0.0860	0.0000	282.4480
Total	**0.2989**	**3.4100**	**2.2935**	**3.0200e-003**	**21.4505**	**0.1625**	**21.6131**	**2.7152**	**0.1495**	**2.8647**	**0.0000**	**280.6422**	**280.6422**	**0.0860**	**0.0000**	**282.4480**

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8300e-003	5.6600e-003	0.0589	1.4000e-004	0.0107	1.0000e-004	0.0108	2.8500e-003	9.0000e-005	2.9400e-003	0.0000	10.0862	10.0862	5.5000e-004	0.0000	10.0978
Total	**3.8300e-003**	**5.6600e-003**	**0.0589**	**1.4000e-004**	**0.0107**	**1.0000e-004**	**0.0108**	**2.8500e-003**	**9.0000e-005**	**2.9400e-003**	**0.0000**	**10.0862**	**10.0862**	**5.5000e-004**	**0.0000**	**10.0978**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.6527	0.0000	9.6527	1.2218	0.0000	1.2218	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2989	3.4100	2.2934	3.0200e-003		0.1625	0.1625		0.1495	0.1495	0.0000	280.6419	280.6419	0.0860	0.0000	282.4476
Total	**0.2989**	**3.4100**	**2.2934**	**3.0200e-003**	**9.6527**	**0.1625**	**9.8153**	**1.2218**	**0.1495**	**1.3714**	**0.0000**	**280.6419**	**280.6419**	**0.0860**	**0.0000**	**282.4476**

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8300e-003	5.6600e-003	0.0589	1.4000e-004	0.0107	1.0000e-004	0.0108	2.8500e-003	9.0000e-005	2.9400e-003	0.0000	10.0862	10.0862	5.5000e-004	0.0000	10.0978
Total	**3.8300e-003**	**5.6600e-003**	**0.0589**	**1.4000e-004**	**0.0107**	**1.0000e-004**	**0.0108**	**2.8500e-003**	**9.0000e-005**	**2.9400e-003**	**0.0000**	**10.0862**	**10.0862**	**5.5000e-004**	**0.0000**	**10.0978**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2513	2.1389	1.4685	2.1700e-003		0.1443	0.1443		0.1355	0.1355	0.0000	193.9781	193.9781	0.0477	0.0000	194.9807
Total	**0.2513**	**2.1389**	**1.4685**	**2.1700e-003**		**0.1443**	**0.1443**		**0.1355**	**0.1355**	**0.0000**	**193.9781**	**193.9781**	**0.0477**	**0.0000**	**194.9807**

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6427	6.5360	8.8174	0.0172	0.4811	0.0960	0.5771	0.1372	0.0883	0.2255	0.0000	1,536.0395	1,536.0395	0.0113	0.0000	1,536.2761
Worker	1.1940	1.7615	18.3362	0.0425	3.3445	0.0309	3.3754	0.8883	0.0285	0.9168	0.0000	3,141.2258	3,141.2258	0.1712	0.0000	3,144.8211
Total	**1.8367**	**8.2975**	**27.1536**	**0.0597**	**3.8256**	**0.1269**	**3.9524**	**1.0255**	**0.1168**	**1.1423**	**0.0000**	**4,677.2652**	**4,677.2652**	**0.1825**	**0.0000**	**4,681.0972**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2513	2.1389	1.4685	2.1700e-003		0.1443	0.1443		0.1355	0.1355	0.0000	193.9779	193.9779	0.0477	0.0000	194.9804
Total	**0.2513**	**2.1389**	**1.4685**	**2.1700e-003**		**0.1443**	**0.1443**		**0.1355**	**0.1355**	**0.0000**	**193.9779**	**193.9779**	**0.0477**	**0.0000**	**194.9804**

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6427	6.5360	8.8174	0.0172	0.4811	0.0960	0.5771	0.1372	0.0883	0.2255	0.0000	1,536.0395	1,536.0395	0.0113	0.0000	1,536.2761
Worker	1.1940	1.7615	18.3362	0.0425	3.3445	0.0309	3.3754	0.8883	0.0285	0.9168	0.0000	3,141.2258	3,141.2258	0.1712	0.0000	3,144.8211
Total	**1.8367**	**8.2975**	**27.1536**	**0.0597**	**3.8256**	**0.1269**	**3.9524**	**1.0255**	**0.1168**	**1.1423**	**0.0000**	**4,677.2652**	**4,677.2652**	**0.1825**	**0.0000**	**4,681.0972**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9727	9.6767	13.6356	0.0276	0.7752	0.1456	0.9209	0.2211	0.1340	0.3551	0.0000	2,433.8399	2,433.8399	0.0181	0.0000	2,434.2191
Worker	1.7255	2.5761	26.7544	0.0685	5.3883	0.0482	5.4365	1.4311	0.0446	1.4758	0.0000	4,875.3889	4,875.3889	0.2562	0.0000	4,880.7692
Total	**2.6982**	**12.2528**	**40.3900**	**0.0961**	**6.1635**	**0.1939**	**6.3574**	**1.6523**	**0.1786**	**1.8308**	**0.0000**	**7,309.2288**	**7,309.2288**	**0.2743**	**0.0000**	**7,314.9884**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9727	9.6767	13.6356	0.0276	0.7752	0.1456	0.9209	0.2211	0.1340	0.3551	0.0000	2,433.8399	2,433.8399	0.0181	0.0000	2,434.2191
Worker	1.7255	2.5761	26.7544	0.0685	5.3883	0.0482	5.4365	1.4311	0.0446	1.4758	0.0000	4,875.3889	4,875.3889	0.2562	0.0000	4,880.7692
Total	**2.6982**	**12.2528**	**40.3900**	**0.0961**	**6.1635**	**0.1939**	**6.3574**	**1.6523**	**0.1786**	**1.8308**	**0.0000**	**7,309.2288**	**7,309.2288**	**0.2743**	**0.0000**	**7,314.9884**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3069	2.7359	2.2342	3.5000e-003		0.1677	0.1677		0.1577	0.1577	0.0000	305.5302	305.5302	0.0743	0.0000	307.0913
Total	**0.3069**	**2.7359**	**2.2342**	**3.5000e-003**		**0.1677**	**0.1677**		**0.1577**	**0.1577**	**0.0000**	**305.5302**	**305.5302**	**0.0743**	**0.0000**	**307.0913**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9218	8.9230	13.1860	0.0275	0.7754	0.1384	0.9138	0.2212	0.1273	0.3485	0.0000	2,383.8784	2,383.8784	0.0177	0.0000	2,384.2494
Worker	1.5822	2.3621	24.5134	0.0682	5.3883	0.0470	5.4353	1.4311	0.0436	1.4747	0.0000	4,684.1409	4,684.1409	0.2395	0.0000	4,689.1696
Total	**2.5040**	**11.2851**	**37.6994**	**0.0957**	**6.1637**	**0.1854**	**6.3491**	**1.6523**	**0.1709**	**1.8232**	**0.0000**	**7,068.0192**	**7,068.0192**	**0.2571**	**0.0000**	**7,073.4191**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3069	2.7359	2.2342	3.5000e-003		0.1677	0.1677		0.1577	0.1577	0.0000	305.5299	305.5299	0.0743	0.0000	307.0909
Total	**0.3069**	**2.7359**	**2.2342**	**3.5000e-003**		**0.1677**	**0.1677**		**0.1577**	**0.1577**	**0.0000**	**305.5299**	**305.5299**	**0.0743**	**0.0000**	**307.0909**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9218	8.9230	13.1860	0.0275	0.7754	0.1384	0.9138	0.2212	0.1273	0.3485	0.0000	2,383.8784	2,383.8784	0.0177	0.0000	2,384.2494
Worker	1.5822	2.3621	24.5134	0.0682	5.3883	0.0470	5.4353	1.4311	0.0436	1.4747	0.0000	4,684.1409	4,684.1409	0.2395	0.0000	4,689.1696
Total	**2.5040**	**11.2851**	**37.6994**	**0.0957**	**6.1637**	**0.1854**	**6.3491**	**1.6523**	**0.1709**	**1.8232**	**0.0000**	**7,068.0192**	**7,068.0192**	**0.2571**	**0.0000**	**7,073.4191**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000	2.2019	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.1514	302.1514	0.0736	0.0000	303.6973
Total	**0.2766**	**2.5000**	**2.2019**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.1514**	**302.1514**	**0.0736**	**0.0000**	**303.6973**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.8841	7.8335	12.8763	0.0276	0.7785	0.1269	0.9054	0.2221	0.1167	0.3388	0.0000	2,339.6979	2,339.6979	0.0174	0.0000	2,340.0629
Worker	1.4880	2.1979	22.9037	0.0685	5.4090	0.0467	5.4557	1.4366	0.0433	1.4799	0.0000	4,513.0938	4,513.0938	0.2278	0.0000	4,517.8785
Total	**2.3721**	**10.0314**	**35.7800**	**0.0961**	**6.1874**	**0.1736**	**6.3610**	**1.6587**	**0.1601**	**1.8187**	**0.0000**	**6,852.7917**	**6,852.7917**	**0.2452**	**0.0000**	**6,857.9414**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000	2.2019	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.1510	302.1510	0.0736	0.0000	303.6969
Total	**0.2766**	**2.5000**	**2.2019**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.1510**	**302.1510**	**0.0736**	**0.0000**	**303.6969**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.8841	7.8335	12.8763	0.0276	0.7785	0.1269	0.9054	0.2221	0.1167	0.3388	0.0000	2,339.6979	2,339.6979	0.0174	0.0000	2,340.0629
Worker	1.4880	2.1979	22.9037	0.0685	5.4090	0.0467	5.4557	1.4366	0.0433	1.4799	0.0000	4,513.0938	4,513.0938	0.2278	0.0000	4,517.8785
Total	**2.3721**	**10.0314**	**35.7800**	**0.0961**	**6.1874**	**0.1736**	**6.3610**	**1.6587**	**0.1601**	**1.8187**	**0.0000**	**6,852.7917**	**6,852.7917**	**0.2452**	**0.0000**	**6,857.9414**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629	2.1582	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.0339	301.0339	0.0725	0.0000	302.5568
Total	**0.2471**	**2.2629**	**2.1582**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.0339**	**301.0339**	**0.0725**	**0.0000**	**302.5568**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.8494	6.6360	12.4894	0.0275	0.7755	0.1151	0.8906	0.2212	0.1059	0.3271	0.0000	2,328.9773	2,328.9773	0.0174	0.0000	2,329.3435
Worker	1.4013	2.0441	21.4064	0.0683	5.3883	0.0464	5.4347	1.4311	0.0430	1.4742	0.0000	4,425.3488	4,425.3488	0.2171	0.0000	4,429.9083
Total	**2.2507**	**8.6801**	**33.8957**	**0.0958**	**6.1638**	**0.1615**	**6.3253**	**1.6524**	**0.1489**	**1.8013**	**0.0000**	**6,754.3260**	**6,754.3260**	**0.2346**	**0.0000**	**6,759.2517**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629	2.1582	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.0335	301.0335	0.0725	0.0000	302.5565
Total	**0.2471**	**2.2629**	**2.1582**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.0335**	**301.0335**	**0.0725**	**0.0000**	**302.5565**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.8494	6.6360	12.4894	0.0275	0.7755	0.1151	0.8906	0.2212	0.1059	0.3271	0.0000	2,328.9773	2,328.9773	0.0174	0.0000	2,329.3435
Worker	1.4013	2.0441	21.4064	0.0683	5.3883	0.0464	5.4347	1.4311	0.0430	1.4742	0.0000	4,425.3488	4,425.3488	0.2171	0.0000	4,429.9083
Total	**2.2507**	**8.6801**	**33.8957**	**0.0958**	**6.1638**	**0.1615**	**6.3253**	**1.6524**	**0.1489**	**1.8013**	**0.0000**	**6,754.3260**	**6,754.3260**	**0.2346**	**0.0000**	**6,759.2517**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197	2.1226	3.4900e-003		0.1047	0.1047		0.0986	0.0986	0.0000	299.9946	299.9946	0.0718	0.0000	301.5017
Total	**0.2209**	**2.0197**	**2.1226**	**3.4900e-003**		**0.1047**	**0.1047**		**0.0986**	**0.0986**	**0.0000**	**299.9946**	**299.9946**	**0.0718**	**0.0000**	**301.5017**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.8269	6.0012	12.1194	0.0273	0.7726	0.1134	0.8859	0.2204	0.1043	0.3247	0.0000	2,318.1444	2,318.1444	0.0178	0.0000	2,318.5172
Worker	1.3199	1.9059	20.0098	0.0681	5.3677	0.0460	5.4137	1.4257	0.0427	1.4683	0.0000	4,334.9529	4,334.9529	0.2070	0.0000	4,339.2992
Total	**2.1468**	**7.9071**	**32.1292**	**0.0954**	**6.1402**	**0.1594**	**6.2996**	**1.6460**	**0.1470**	**1.7930**	**0.0000**	**6,653.0973**	**6,653.0973**	**0.2247**	**0.0000**	**6,657.8164**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197	2.1226	3.4900e-003		0.1047	0.1047		0.0986	0.0986	0.0000	299.9943	299.9943	0.0718	0.0000	301.5013
Total	**0.2209**	**2.0197**	**2.1226**	**3.4900e-003**		**0.1047**	**0.1047**		**0.0986**	**0.0986**	**0.0000**	**299.9943**	**299.9943**	**0.0718**	**0.0000**	**301.5013**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.8269	6.0012	12.1194	0.0273	0.7726	0.1134	0.8859	0.2204	0.1043	0.3247	0.0000	2,318.1444	2,318.1444	0.0178	0.0000	2,318.5172
Worker	1.3199	1.9059	20.0098	0.0681	5.3677	0.0460	5.4137	1.4257	0.0427	1.4683	0.0000	4,334.9529	4,334.9529	0.2070	0.0000	4,339.2992
Total	**2.1468**	**7.9071**	**32.1292**	**0.0954**	**6.1402**	**0.1594**	**6.2996**	**1.6460**	**0.1470**	**1.7930**	**0.0000**	**6,653.0973**	**6,653.0973**	**0.2247**	**0.0000**	**6,657.8164**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606	2.1072	3.4900e-003		0.0906	0.0906		0.0852	0.0852	0.0000	300.0980	300.0980	0.0713	0.0000	301.5949
Total	**0.2036**	**1.8606**	**2.1072**	**3.4900e-003**		**0.0906**	**0.0906**		**0.0852**	**0.0852**	**0.0000**	**300.0980**	**300.0980**	**0.0713**	**0.0000**	**301.5949**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7674	4.7693	11.6701	0.0272	0.7726	0.1119	0.8845	0.2204	0.1030	0.3234	0.0000	2,307.1981	2,307.1981	0.0160	0.0000	2,307.5334
Worker	1.2476	1.7891	18.7965	0.0681	5.3677	0.0458	5.4135	1.4257	0.0425	1.4681	0.0000	4,267.4811	4,267.4811	0.1987	0.0000	4,271.6530
Total	**2.0150**	**6.5584**	**30.4666**	**0.0952**	**6.1403**	**0.1577**	**6.2980**	**1.6461**	**0.1455**	**1.7915**	**0.0000**	**6,574.6792**	**6,574.6792**	**0.2146**	**0.0000**	**6,579.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606	2.1072	3.4900e-003		0.0906	0.0906		0.0852	0.0852	0.0000	300.0976	300.0976	0.0713	0.0000	301.5946
Total	**0.2036**	**1.8606**	**2.1072**	**3.4900e-003**		**0.0906**	**0.0906**		**0.0852**	**0.0852**	**0.0000**	**300.0976**	**300.0976**	**0.0713**	**0.0000**	**301.5946**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7674	4.7693	11.6701	0.0272	0.7726	0.1119	0.8845	0.2204	0.1030	0.3234	0.0000	2,307.1981	2,307.1981	0.0160	0.0000	2,307.5334
Worker	1.2476	1.7891	18.7965	0.0681	5.3677	0.0458	5.4135	1.4257	0.0425	1.4681	0.0000	4,267.4811	4,267.4811	0.1987	0.0000	4,271.6530
Total	**2.0150**	**6.5584**	**30.4666**	**0.0952**	**6.1403**	**0.1577**	**6.2980**	**1.6461**	**0.1455**	**1.7915**	**0.0000**	**6,574.6792**	**6,574.6792**	**0.2146**	**0.0000**	**6,579.1864**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524	2.1135	3.5200e-003		0.0800	0.0800		0.0752	0.0752	0.0000	302.4646	302.4646	0.0714	0.0000	303.9643
Total	**0.1920**	**1.7524**	**2.1135**	**3.5200e-003**		**0.0800**	**0.0800**		**0.0752**	**0.0752**	**0.0000**	**302.4646**	**302.4646**	**0.0714**	**0.0000**	**303.9643**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7591	4.7768	11.5017	0.0275	0.7785	0.1129	0.8915	0.2221	0.1039	0.3260	0.0000	2,330.0727	2,330.0727	0.0163	0.0000	2,330.4146
Worker	1.1951	1.7041	17.9810	0.0691	5.4090	0.0466	5.4555	1.4366	0.0432	1.4798	0.0000	4,268.5103	4,268.5103	0.1949	0.0000	4,272.6038
Total	**1.9542**	**6.4808**	**29.4827**	**0.0965**	**6.1875**	**0.1595**	**6.3470**	**1.6587**	**0.1471**	**1.8058**	**0.0000**	**6,598.5829**	**6,598.5829**	**0.2112**	**0.0000**	**6,603.0185**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524	2.1135	3.5200e-003		0.0800	0.0800		0.0752	0.0752	0.0000	302.4642	302.4642	0.0714	0.0000	303.9639
Total	**0.1920**	**1.7524**	**2.1135**	**3.5200e-003**		**0.0800**	**0.0800**		**0.0752**	**0.0752**	**0.0000**	**302.4642**	**302.4642**	**0.0714**	**0.0000**	**303.9639**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7591	4.7768	11.5017	0.0275	0.7785	0.1129	0.8915	0.2221	0.1039	0.3260	0.0000	2,330.0727	2,330.0727	0.0163	0.0000	2,330.4146
Worker	1.1951	1.7041	17.9810	0.0691	5.4090	0.0466	5.4555	1.4366	0.0432	1.4798	0.0000	4,268.5103	4,268.5103	0.1949	0.0000	4,272.6038
Total	**1.9542**	**6.4808**	**29.4827**	**0.0965**	**6.1875**	**0.1595**	**6.3470**	**1.6587**	**0.1471**	**1.8058**	**0.0000**	**6,598.5829**	**6,598.5829**	**0.2112**	**0.0000**	**6,603.0185**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7435	4.7254	11.2665	0.0273	0.7756	0.1131	0.8886	0.2212	0.1040	0.3253	0.0000	2,321.2959	2,321.2959	0.0163	0.0000	2,321.6379
Worker	1.1340	1.6099	17.0363	0.0688	5.3883	0.0464	5.4347	1.4311	0.0430	1.4742	0.0000	4,197.1316	4,197.1316	0.1879	0.0000	4,201.0779
Total	**1.8775**	**6.3353**	**28.3027**	**0.0961**	**6.1639**	**0.1595**	**6.3233**	**1.6524**	**0.1471**	**1.7994**	**0.0000**	**6,518.4275**	**6,518.4275**	**0.2042**	**0.0000**	**6,522.7158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7435	4.7254	11.2665	0.0273	0.7756	0.1131	0.8886	0.2212	0.1040	0.3253	0.0000	2,321.2959	2,321.2959	0.0163	0.0000	2,321.6379
Worker	1.1340	1.6099	17.0363	0.0688	5.3883	0.0464	5.4347	1.4311	0.0430	1.4742	0.0000	4,197.1316	4,197.1316	0.1879	0.0000	4,201.0779
Total	**1.8775**	**6.3353**	**28.3027**	**0.0961**	**6.1639**	**0.1595**	**6.3233**	**1.6524**	**0.1471**	**1.7994**	**0.0000**	**6,518.4275**	**6,518.4275**	**0.2042**	**0.0000**	**6,522.7158**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7203	4.5832	11.0575	0.0273	0.7756	0.1083	0.8839	0.2212	0.0997	0.3209	0.0000	2,320.8183	2,320.8183	0.0158	0.0000	2,321.1497
Worker	1.0824	1.5336	16.2694	0.0688	5.3883	0.0466	5.4349	1.4311	0.0432	1.4744	0.0000	4,148.7629	4,148.7629	0.1824	0.0000	4,152.5927
Total	**1.8026**	**6.1168**	**27.3269**	**0.0961**	**6.1639**	**0.1549**	**6.3188**	**1.6524**	**0.1429**	**1.7953**	**0.0000**	**6,469.5812**	**6,469.5812**	**0.1982**	**0.0000**	**6,473.7424**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7203	4.5832	11.0575	0.0273	0.7756	0.1083	0.8839	0.2212	0.0997	0.3209	0.0000	2,320.8183	2,320.8183	0.0158	0.0000	2,321.1497
Worker	1.0824	1.5336	16.2694	0.0688	5.3883	0.0466	5.4349	1.4311	0.0432	1.4744	0.0000	4,148.7629	4,148.7629	0.1824	0.0000	4,152.5927
Total	**1.8026**	**6.1168**	**27.3269**	**0.0961**	**6.1639**	**0.1549**	**6.3188**	**1.6524**	**0.1429**	**1.7953**	**0.0000**	**6,469.5812**	**6,469.5812**	**0.1982**	**0.0000**	**6,473.7424**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7129	4.5460	10.9419	0.0273	0.7756	0.1086	0.8842	0.2213	0.0999	0.3212	0.0000	2,320.9919	2,320.9919	0.0158	0.0000	2,321.3241
Worker	1.0340	1.4647	15.5825	0.0688	5.3883	0.0467	5.4350	1.4311	0.0433	1.4745	0.0000	4,106.3645	4,106.3645	0.1774	0.0000	4,110.0895
Total	**1.7469**	**6.0107**	**26.5243**	**0.0961**	**6.1639**	**0.1553**	**6.3192**	**1.6524**	**0.1433**	**1.7956**	**0.0000**	**6,427.3564**	**6,427.3564**	**0.1932**	**0.0000**	**6,431.4136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7129	4.5460	10.9419	0.0273	0.7756	0.1086	0.8842	0.2213	0.0999	0.3212	0.0000	2,320.9919	2,320.9919	0.0158	0.0000	2,321.3241
Worker	1.0340	1.4647	15.5825	0.0688	5.3883	0.0467	5.4350	1.4311	0.0433	1.4745	0.0000	4,106.3645	4,106.3645	0.1774	0.0000	4,110.0895
Total	**1.7469**	**6.0107**	**26.5243**	**0.0961**	**6.1639**	**0.1553**	**6.3192**	**1.6524**	**0.1433**	**1.7956**	**0.0000**	**6,427.3564**	**6,427.3564**	**0.1932**	**0.0000**	**6,431.4136**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133	2.0867	3.4900e-003		0.0683	0.0683		0.0642	0.0642	0.0000	300.2471	300.2471	0.0705	0.0000	301.7269
Total	**0.1770**	**1.6133**	**2.0867**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0642**	**0.0642**	**0.0000**	**300.2471**	**300.2471**	**0.0705**	**0.0000**	**301.7269**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7010	4.4848	10.7937	0.0272	0.7727	0.1075	0.8802	0.2204	0.0989	0.3193	0.0000	2,312.1304	2,312.1304	0.0157	0.0000	2,312.4597
Worker	0.9863	1.3973	14.9271	0.0685	5.3677	0.0466	5.4143	1.4257	0.0433	1.4689	0.0000	4,054.1719	4,054.1719	0.1723	0.0000	4,057.7902
Total	**1.6873**	**5.8821**	**25.7207**	**0.0957**	**6.1403**	**0.1541**	**6.2945**	**1.6461**	**0.1422**	**1.7882**	**0.0000**	**6,366.3022**	**6,366.3022**	**0.1880**	**0.0000**	**6,370.2499**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133	2.0867	3.4900e-003		0.0683	0.0683		0.0642	0.0642	0.0000	300.2467	300.2467	0.0705	0.0000	301.7266
Total	**0.1770**	**1.6133**	**2.0867**	**3.4900e-003**		**0.0683**	**0.0683**		**0.0642**	**0.0642**	**0.0000**	**300.2467**	**300.2467**	**0.0705**	**0.0000**	**301.7266**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7010	4.4848	10.7937	0.0272	0.7727	0.1075	0.8802	0.2204	0.0989	0.3193	0.0000	2,312.1304	2,312.1304	0.0157	0.0000	2,312.4597
Worker	0.9863	1.3973	14.9271	0.0685	5.3677	0.0466	5.4143	1.4257	0.0433	1.4689	0.0000	4,054.1719	4,054.1719	0.1723	0.0000	4,057.7902
Total	**1.6873**	**5.8821**	**25.7207**	**0.0957**	**6.1403**	**0.1541**	**6.2945**	**1.6461**	**0.1422**	**1.7882**	**0.0000**	**6,366.3022**	**6,366.3022**	**0.1880**	**0.0000**	**6,370.2499**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6956	4.4797	10.7135	0.0273	0.7757	0.1081	0.8837	0.2213	0.0994	0.3207	0.0000	2,321.1073	2,321.1073	0.0158	0.0000	2,321.4383
Worker	0.9457	1.3407	14.3859	0.0688	5.3883	0.0468	5.4351	1.4311	0.0435	1.4746	0.0000	4,037.8845	4,037.8845	0.1686	0.0000	4,041.4250
Total	**1.6413**	**5.8204**	**25.0993**	**0.0961**	**6.1640**	**0.1549**	**6.3189**	**1.6524**	**0.1429**	**1.7953**	**0.0000**	**6,358.9917**	**6,358.9917**	**0.1844**	**0.0000**	**6,362.8633**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195	2.0948	3.5000e-003		0.0685	0.0685		0.0645	0.0645	0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total	**0.1777**	**1.6195**	**2.0948**	**3.5000e-003**		**0.0685**	**0.0685**		**0.0645**	**0.0645**	**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6956	4.4797	10.7135	0.0273	0.7757	0.1081	0.8837	0.2213	0.0994	0.3207	0.0000	2,321.1073	2,321.1073	0.0158	0.0000	2,321.4383
Worker	0.9457	1.3407	14.3859	0.0688	5.3883	0.0468	5.4351	1.4311	0.0435	1.4746	0.0000	4,037.8845	4,037.8845	0.1686	0.0000	4,041.4250
Total	**1.6413**	**5.8204**	**25.0993**	**0.0961**	**6.1640**	**0.1549**	**6.3189**	**1.6524**	**0.1429**	**1.7953**	**0.0000**	**6,358.9917**	**6,358.9917**	**0.1844**	**0.0000**	**6,362.8633**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6882	4.4601	10.6344	0.0273	0.7757	0.1082	0.8839	0.2213	0.0996	0.3209	0.0000	2,321.1325	2,321.1325	0.0158	0.0000	2,321.4639
Worker	0.9032	1.2816	13.8519	0.0688	5.3883	0.0468	5.4351	1.4311	0.0434	1.4745	0.0000	4,010.3669	4,010.3669	0.1645	0.0000	4,013.8209
Total	**1.5915**	**5.7417**	**24.4864**	**0.0961**	**6.1640**	**0.1550**	**6.3190**	**1.6524**	**0.1430**	**1.7954**	**0.0000**	**6,331.4994**	**6,331.4994**	**0.1803**	**0.0000**	**6,335.2848**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6882	4.4601	10.6344	0.0273	0.7757	0.1082	0.8839	0.2213	0.0996	0.3209	0.0000	2,321.1325	2,321.1325	0.0158	0.0000	2,321.4639
Worker	0.9032	1.2816	13.8519	0.0688	5.3883	0.0468	5.4351	1.4311	0.0434	1.4745	0.0000	4,010.3669	4,010.3669	0.1645	0.0000	4,013.8209
Total	**1.5915**	**5.7417**	**24.4864**	**0.0961**	**6.1640**	**0.1550**	**6.3190**	**1.6524**	**0.1430**	**1.7954**	**0.0000**	**6,331.4994**	**6,331.4994**	**0.1803**	**0.0000**	**6,335.2848**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6852	4.4464	10.5795	0.0273	0.7757	0.1078	0.8834	0.2213	0.0991	0.3204	0.0000	2,322.3659	2,322.3659	0.0159	0.0000	2,322.6992
Worker	0.8620	1.2254	13.3737	0.0689	5.3883	0.0468	5.4351	1.4311	0.0434	1.4746	0.0000	3,994.3673	3,994.3673	0.1612	0.0000	3,997.7532
Total	**1.5473**	**5.6718**	**23.9531**	**0.0962**	**6.1640**	**0.1546**	**6.3185**	**1.6524**	**0.1426**	**1.7950**	**0.0000**	**6,316.7332**	**6,316.7332**	**0.1771**	**0.0000**	**6,320.4524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333	2.1051	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total	**0.1702**	**1.0333**	**2.1051**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6852	4.4464	10.5795	0.0273	0.7757	0.1078	0.8834	0.2213	0.0991	0.3204	0.0000	2,322.3659	2,322.3659	0.0159	0.0000	2,322.6992
Worker	0.8620	1.2254	13.3737	0.0689	5.3883	0.0468	5.4351	1.4311	0.0434	1.4746	0.0000	3,994.3673	3,994.3673	0.1612	0.0000	3,997.7532
Total	**1.5473**	**5.6718**	**23.9531**	**0.0962**	**6.1640**	**0.1546**	**6.3185**	**1.6524**	**0.1426**	**1.7950**	**0.0000**	**6,316.7332**	**6,316.7332**	**0.1771**	**0.0000**	**6,320.4524**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1206	0.7324	1.4922	2.8500e-003		0.0137	0.0137		0.0137	0.0137	0.0000	242.0793	242.0793	9.7200e-003	0.0000	242.2834
Total	**0.1206**	**0.7324**	**1.4922**	**2.8500e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**	**0.0000**	**242.0793**	**242.0793**	**9.7200e-003**	**0.0000**	**242.2834**

3.5 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4831	3.1420	7.4742	0.0194	0.5498	0.0765	0.6263	0.1568	0.0704	0.2272	0.0000	1,646.1805	1,646.1805	0.0113	0.0000	1,646.4171
Worker	0.5796	0.8331	9.1716	0.0488	3.8193	0.0331	3.8524	1.0144	0.0307	1.0451	0.0000	2,817.1028	2,817.1028	0.1118	0.0000	2,819.4512
Total	**1.0627**	**3.9751**	**16.6458**	**0.0682**	**4.3691**	**0.1096**	**4.4787**	**1.1712**	**0.1011**	**1.2723**	**0.0000**	**4,463.2834**	**4,463.2834**	**0.1231**	**0.0000**	**4,465.8683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1206	0.7324	1.4922	2.8500e-003		0.0137	0.0137		0.0137	0.0137	0.0000	242.0790	242.0790	9.7200e-003	0.0000	242.2831
Total	**0.1206**	**0.7324**	**1.4922**	**2.8500e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**	**0.0000**	**242.0790**	**242.0790**	**9.7200e-003**	**0.0000**	**242.2831**

3.5 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4831	3.1420	7.4742	0.0194	0.5498	0.0765	0.6263	0.1568	0.0704	0.2272	0.0000	1,646.1805	1,646.1805	0.0113	0.0000	1,646.4171
Worker	0.5796	0.8331	9.1716	0.0488	3.8193	0.0331	3.8524	1.0144	0.0307	1.0451	0.0000	2,817.1028	2,817.1028	0.1118	0.0000	2,819.4512
Total	**1.0627**	**3.9751**	**16.6458**	**0.0682**	**4.3691**	**0.1096**	**4.4787**	**1.1712**	**0.1011**	**1.2723**	**0.0000**	**4,463.2834**	**4,463.2834**	**0.1231**	**0.0000**	**4,465.8683**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0522	0.2687	0.5975	1.0600e-003		0.0125	0.0125		0.0125	0.0125	0.0000	90.8087	90.8087	4.2600e-003	0.0000	90.8981
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0522**	**0.2687**	**0.5975**	**1.0600e-003**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**90.8087**	**90.8087**	**4.2600e-003**	**0.0000**	**90.8981**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	1.3800e-003	0.0152	8.0000e-005	6.3300e-003	5.0000e-005	6.3800e-003	1.6800e-003	5.0000e-005	1.7300e-003	0.0000	4.6677	4.6677	1.9000e-004	0.0000	4.6716
Total	**9.6000e-004**	**1.3800e-003**	**0.0152**	**8.0000e-005**	**6.3300e-003**	**5.0000e-005**	**6.3800e-003**	**1.6800e-003**	**5.0000e-005**	**1.7300e-003**	**0.0000**	**4.6677**	**4.6677**	**1.9000e-004**	**0.0000**	**4.6716**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0522	0.2687	0.5975	1.0600e-003		0.0125	0.0125		0.0125	0.0125	0.0000	90.8086	90.8086	4.2600e-003	0.0000	90.8980
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0522**	**0.2687**	**0.5975**	**1.0600e-003**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**90.8086**	**90.8086**	**4.2600e-003**	**0.0000**	**90.8980**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	1.3800e-003	0.0152	8.0000e-005	6.3300e-003	5.0000e-005	6.3800e-003	1.6800e-003	5.0000e-005	1.7300e-003	0.0000	4.6677	4.6677	1.9000e-004	0.0000	4.6716
Total	**9.6000e-004**	**1.3800e-003**	**0.0152**	**8.0000e-005**	**6.3300e-003**	**5.0000e-005**	**6.3800e-003**	**1.6800e-003**	**5.0000e-005**	**1.7300e-003**	**0.0000**	**4.6677**	**4.6677**	**1.9000e-004**	**0.0000**	**4.6716**

3.6 Paving - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0833	0.4293	0.9544	1.6900e-003		0.0199	0.0199		0.0199	0.0199	0.0000	145.0581	145.0581	6.8000e-003	0.0000	145.2009
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0833**	**0.4293**	**0.9544**	**1.6900e-003**		**0.0199**	**0.0199**		**0.0199**	**0.0199**	**0.0000**	**145.0581**	**145.0581**	**6.8000e-003**	**0.0000**	**145.2009**

3.6 Paving - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	2.1300e-003	0.0236	1.3000e-004	0.0101	9.0000e-005	0.0102	2.6800e-003	8.0000e-005	2.7700e-003	0.0000	7.4249	7.4249	2.9000e-004	0.0000	7.4310
Total	**1.4600e-003**	**2.1300e-003**	**0.0236**	**1.3000e-004**	**0.0101**	**9.0000e-005**	**0.0102**	**2.6800e-003**	**8.0000e-005**	**2.7700e-003**	**0.0000**	**7.4249**	**7.4249**	**2.9000e-004**	**0.0000**	**7.4310**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0833	0.4293	0.9544	1.6900e-003		0.0199	0.0199		0.0199	0.0199	0.0000	145.0579	145.0579	6.8000e-003	0.0000	145.2007
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0833**	**0.4293**	**0.9544**	**1.6900e-003**		**0.0199**	**0.0199**		**0.0199**	**0.0199**	**0.0000**	**145.0579**	**145.0579**	**6.8000e-003**	**0.0000**	**145.2007**

3.6 Paving - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	2.1300e-003	0.0236	1.3000e-004	0.0101	9.0000e-005	0.0102	2.6800e-003	8.0000e-005	2.7700e-003	0.0000	7.4249	7.4249	2.9000e-004	0.0000	7.4310
Total	**1.4600e-003**	**2.1300e-003**	**0.0236**	**1.3000e-004**	**0.0101**	**9.0000e-005**	**0.0102**	**2.6800e-003**	**8.0000e-005**	**2.7700e-003**	**0.0000**	**7.4249**	**7.4249**	**2.9000e-004**	**0.0000**	**7.4310**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	16.5092					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9600e-003	0.0587	0.1232	2.0000e-004		1.3900e-003	1.3900e-003		1.3900e-003	1.3900e-003	0.0000	17.4898	17.4898	7.1000e-004	0.0000	17.5047
Total	**16.5181**	**0.0587**	**0.1232**	**2.0000e-004**		**1.3900e-003**	**1.3900e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**17.4898**	**17.4898**	**7.1000e-004**	**0.0000**	**17.5047**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0820	0.1190	1.3215	7.2400e-003	0.5660	4.8800e-003	0.5709	0.1503	4.5300e-003	0.1549	0.0000	415.7051	415.7051	0.0163	0.0000	416.0464
Total	**0.0820**	**0.1190**	**1.3215**	**7.2400e-003**	**0.5660**	**4.8800e-003**	**0.5709**	**0.1503**	**4.5300e-003**	**0.1549**	**0.0000**	**415.7051**	**415.7051**	**0.0163**	**0.0000**	**416.0464**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	16.5092					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9600e-003	0.0587	0.1232	2.0000e-004		1.3900e-003	1.3900e-003		1.3900e-003	1.3900e-003	0.0000	17.4898	17.4898	7.1000e-004	0.0000	17.5046
Total	**16.5181**	**0.0587**	**0.1232**	**2.0000e-004**		**1.3900e-003**	**1.3900e-003**		**1.3900e-003**	**1.3900e-003**	**0.0000**	**17.4898**	**17.4898**	**7.1000e-004**	**0.0000**	**17.5046**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0820	0.1190	1.3215	7.2400e-003	0.5660	4.8800e-003	0.5709	0.1503	4.5300e-003	0.1549	0.0000	415.7051	415.7051	0.0163	0.0000	416.0464
Total	**0.0820**	**0.1190**	**1.3215**	**7.2400e-003**	**0.5660**	**4.8800e-003**	**0.5709**	**0.1503**	**4.5300e-003**	**0.1549**	**0.0000**	**415.7051**	**415.7051**	**0.0163**	**0.0000**	**416.0464**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	30.4877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0165	0.1083	0.2274	3.8000e-004		2.5700e-003	2.5700e-003		2.5700e-003	2.5700e-003	0.0000	32.2987	32.2987	1.3100e-003	0.0000	32.3261
Total	**30.5043**	**0.1083**	**0.2274**	**3.8000e-004**		**2.5700e-003**	**2.5700e-003**		**2.5700e-003**	**2.5700e-003**	**0.0000**	**32.2987**	**32.2987**	**1.3100e-003**	**0.0000**	**32.3261**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1449	0.2130	2.3721	0.0134	1.0452	8.9700e-003	1.0542	0.2776	8.3300e-003	0.2859	0.0000	764.9170	764.9170	0.0295	0.0000	765.5356
Total	**0.1449**	**0.2130**	**2.3721**	**0.0134**	**1.0452**	**8.9700e-003**	**1.0542**	**0.2776**	**8.3300e-003**	**0.2859**	**0.0000**	**764.9170**	**764.9170**	**0.0295**	**0.0000**	**765.5356**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	30.4877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0165	0.1083	0.2274	3.8000e-004		2.5700e-003	2.5700e-003		2.5700e-003	2.5700e-003	0.0000	32.2986	32.2986	1.3100e-003	0.0000	32.3261
Total	**30.5043**	**0.1083**	**0.2274**	**3.8000e-004**		**2.5700e-003**	**2.5700e-003**		**2.5700e-003**	**2.5700e-003**	**0.0000**	**32.2986**	**32.2986**	**1.3100e-003**	**0.0000**	**32.3261**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1449	0.2130	2.3721	0.0134	1.0452	8.9700e-003	1.0542	0.2776	8.3300e-003	0.2859	0.0000	764.9170	764.9170	0.0295	0.0000	765.5356
Total	**0.1449**	**0.2130**	**2.3721**	**0.0134**	**1.0452**	**8.9700e-003**	**1.0542**	**0.2776**	**8.3300e-003**	**0.2859**	**0.0000**	**764.9170**	**764.9170**	**0.0295**	**0.0000**	**765.5356**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	34.0335	72.0909	339.2678	1.2215	75.8714	1.8044	77.6758	20.3457	1.6653	22.0110	0.0000	79,676.1425	79,676.1425	2.1784	0.0000	79,721.8891
Unmitigated	37.4620	94.1154	415.6377	1.7432	109.8691	2.5118	112.3809	29.4625	2.3179	31.7804	0.0000	113,703.9847	113,703.9847	3.0549	0.0000	113,768.1376

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	18,241.12	19,818.88	16801.76	62,400,240	43,091,231
General Office Building	3,936.30	847.32	350.37	9,608,775	6,635,454
Office Park	4,213.98	605.16	280.44	10,597,138	7,317,980
Single Family Housing	29,226.78	30,784.32	26783.58	99,440,000	68,669,479
Strip Mall	61,339.32	58,183.78	28275.32	106,859,458	73,793,074
Total	116,957.50	110,239.46	72,491.47	288,905,610	199,507,218

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Office Park	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.491908	0.059855	0.185077	0.131229	0.044940	0.007356	0.019164	0.046757	0.003019	0.003347	0.004084	0.000506	0.002760

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18,238.4733	18,238.4733	0.8384	0.1735	18,309.8499
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18,238.4733	18,238.4733	0.8384	0.1735	18,309.8499
NaturalGas Mitigated	0.7655	6.5584	2.9056	0.0418		0.5289	0.5289		0.5289	0.5289	0.0000	7,576.1433	7,576.1433	0.1452	0.1389	7,622.2504
NaturalGas Unmitigated	0.7655	6.5584	2.9056	0.0418		0.5289	0.5289		0.5289	0.5289	0.0000	7,576.1433	7,576.1433	0.1452	0.1389	7,622.2504

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	1.30495e+006	7.0400e-003	0.0640	0.0537	3.8000e-004		4.8600e-003	4.8600e-003		4.8600e-003	4.8600e-003	0.0000	69.6372	69.6372	1.3300e-003	1.2800e-003	70.0610
Office Park	1.13283e+006	6.1100e-003	0.0555	0.0467	3.3000e-004		4.2200e-003	4.2200e-003		4.2200e-003	4.2200e-003	0.0000	60.4521	60.4521	1.1600e-003	1.1100e-003	60.8200
Single Family Housing	1.03124e+008	0.5561	4.7518	2.0220	0.0303		0.3842	0.3842		0.3842	0.3842	0.0000	5,503.0986	5,503.0986	0.1055	0.1009	5,536.5896
Strip Mall	3.21091e+006	0.0173	0.1574	0.1322	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	171.3463	171.3463	3.2800e-003	3.1400e-003	172.3891
Apartments Mid Rise	3.31987e+007	0.1790	1.5297	0.6510	9.7600e-003		0.1237	0.1237		0.1237	0.1237	0.0000	1,771.6091	1,771.6091	0.0340	0.0325	1,782.3908
Total		**0.7655**	**6.5584**	**2.9056**	**0.0417**		**0.5289**	**0.5289**		**0.5289**	**0.5289**	**0.0000**	**7,576.1433**	**7,576.1433**	**0.1452**	**0.1389**	**7,622.2504**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Office Park	1.13283e+006	6.1100e-003	0.0555	0.0467	3.3000e-004		4.2200e-003	4.2200e-003		4.2200e-003	4.2200e-003	0.0000	60.4521	60.4521	1.1600e-003	1.1100e-003	60.8200
Single Family Housing	1.03124e+008	0.5561	4.7518	2.0220	0.0303		0.3842	0.3842		0.3842	0.3842	0.0000	5,503.0986	5,503.0986	0.1055	0.1009	5,536.5896
Strip Mall	3.21091e+006	0.0173	0.1574	0.1322	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	171.3463	171.3463	3.2800e-003	3.1400e-003	172.3891
Apartments Mid Rise	3.31987e+007	0.1790	1.5297	0.6510	9.7600e-003		0.1237	0.1237		0.1237	0.1237	0.0000	1,771.6091	1,771.6091	0.0340	0.0325	1,782.3908
General Office Building	1.30495e+006	7.0400e-003	0.0640	0.0537	3.8000e-004		4.8600e-003	4.8600e-003		4.8600e-003	4.8600e-003	0.0000	69.6372	69.6372	1.3300e-003	1.2800e-003	70.0610
Total		**0.7655**	**6.5584**	**2.9056**	**0.0417**		**0.5289**	**0.5289**		**0.5289**	**0.5289**	**0.0000**	**7,576.1433**	**7,576.1433**	**0.1452**	**0.1389**	**7,622.2504**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.06702e+007	3,053.4571	0.1404	0.0290	3,065.4069
General Office Building	3.8219e+006	1,093.7011	0.0503	0.0104	1,097.9813
Office Park	4.11435e+006	1,177.3908	0.0541	0.0112	1,181.9985
Single Family Housing	2.34536e+007	6,711.6497	0.3085	0.0638	6,737.9158
Strip Mall	2.16736e+007	6,202.2747	0.2851	0.0590	6,226.5474
Total		**18,238.4733**	**0.8384**	**0.1735**	**18,309.8499**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.06702e+007	3,053.4571	0.1404	0.0290	3,065.4069
General Office Building	3.8219e+006	1,093.7011	0.0503	0.0104	1,097.9813
Office Park	4.11435e+006	1,177.3908	0.0541	0.0112	1,181.9985
Single Family Housing	2.34536e+007	6,711.6497	0.3085	0.0638	6,737.9158
Strip Mall	2.16736e+007	6,202.2747	0.2851	0.0590	6,226.5474
Total		**18,238.4733**	**0.8384**	**0.1735**	**18,309.8499**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	43.9837	0.6905	59.8560	3.1700e-003		0.3331	0.3331		0.3331	0.3331	0.0000	98.1272	98.1272	0.0935	0.0000	100.0906
Unmitigated	63.7871	1.1743	96.4358	0.0614		5.8922	5.8922		5.8913	5.8913	618.4074	1,286.4938	1,904.9012	1.9377	0.0420	1,958.6047

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.4334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	37.4927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	19.0697	0.4838	36.5798	0.0582		5.5592	5.5592		5.5583	5.5583	618.4074	1,188.3667	1,806.7741	1.8442	0.0420	1,858.5142
Landscaping	1.7913	0.6905	59.8560	3.1700e-003		0.3331	0.3331		0.3331	0.3331	0.0000	98.1272	98.1272	0.0935	0.0000	100.0906
Total	**63.7871**	**1.1743**	**96.4358**	**0.0614**		**5.8922**	**5.8922**		**5.8913**	**5.8913**	**618.4074**	**1,286.4938**	**1,904.9012**	**1.9377**	**0.0420**	**1,958.6047**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6997					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	37.4927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7913	0.6905	59.8560	3.1700e-003		0.3331	0.3331		0.3331	0.3331	0.0000	98.1272	98.1272	0.0935	0.0000	100.0906
Total	**43.9837**	**0.6905**	**59.8560**	**3.1700e-003**		**0.3331**	**0.3331**		**0.3331**	**0.3331**	**0.0000**	**98.1272**	**98.1272**	**0.0935**	**0.0000**	**100.0906**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3,682.1085	20.0652	0.5025	4,259.2548
Unmitigated	3,682.1085	20.0688	0.5033	4,259.5640

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	180.346 / 113.697	1,090.6956	5.9241	0.1486	1,261.1638
General Office Building	63.5434 / 38.9459	380.7547	2.0871	0.0523	440.8038
Office Park	65.5838 / 40.1965	392.9808	2.1542	0.0540	454.9580
Single Family Housing	198.98 / 125.444	1,203.3903	6.5362	0.1639	1,391.4719
Strip Mall	102.517 / 62.8331	614.2871	3.3673	0.0844	711.1667
Total		**3,682.1085**	**20.0688**	**0.5033**	**4,259.5640**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	180.346 / 113.697	1,090.6956	5.9230	0.1484	1,261.0725
General Office Building	63.5434 / 38.9459	380.7547	2.0868	0.0522	440.7716
Office Park	65.5838 / 40.1965	392.9808	2.1538	0.0539	454.9248
Single Family Housing	198.98 / 125.444	1,203.3903	6.5350	0.1637	1,391.3712
Strip Mall	102.517 / 62.8331	614.2871	3.3667	0.0843	711.1148
Total		**3,682.1085**	**20.0652**	**0.5025**	**4,259.2548**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	708.7521	41.8861	0.0000	1,588.3591
Unmitigated	1,417.5042	83.7721	0.0000	3,176.7182

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	1273.28	258.4643	15.2748	0.0000	579.2352
General Office Building	332.49	67.4925	3.9887	0.0000	151.2550
Office Park	343.17	69.6604	4.1168	0.0000	156.1135
Single Family Housing	3580.94	726.8985	42.9585	0.0000	1,629.0263
Strip Mall	1453.21	294.9885	17.4333	0.0000	661.0882
Total		**1,417.5042**	**83.7721**	**0.0000**	**3,176.7182**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	636.64	129.2322	7.6374	0.0000	289.6176
General Office Building	166.245	33.7462	1.9944	0.0000	75.6275
Office Park	171.585	34.8302	2.0584	0.0000	78.0567
Single Family Housing	1790.47	363.4492	21.4792	0.0000	814.5132
Strip Mall	726.605	147.4943	8.7167	0.0000	330.5441
Total		**708.7521**	**41.8861**	**0.0000**	**1,588.3591**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Greenhouse Gas Emission Worksheet

N20 Mobile Emissions Chino Hills General Plan Update

From URBEMIS 2007 Vehicle Fleet Mix Output:

Annual VMT: 199,507,218

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	46.0%	0.04	0.0184	0.04	0.0184
Light Truck < 3750 lbs	10.3%	0.05	0.00515	0.06	0.00618
Light Truck 3751-5750 lbs	23.2%	0.05	0.0116	0.06	0.01392
Med Truck 5751-8500 lbs	12.2%	0.12	0.01464	0.2	0.0244
Lite-Heavy Truck 8501-10,000 lbs	2.1%	0.12	0.00252	0.2	0.0042
Lite-Heavy Truck 10,001-14,000 lbs	0.5%	0.09	0.00045	0.125	0.000625
Med-Heavy Truck 14,001-33,000 lbs	1.0%	0.06	0.0006	0.05	0.0005
Heavy-Heavy Truck 33,001-60,000 lbs	2.9%	0.06	0.00174	0.05	0.00145
Other Bus	0.1%	0.06	0.00006	0.05	0.00005
Urban Bus	0.1%	0.06	0.00006	0.05	0.00005
Motorcycle	1.1%	0.09	0.00099	0.01	0.00011
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	0.4%	0.09	0.00036	0.125	0.0005
Total	**100.0%**		**0.05663**		**0.070435**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	21	GWP
N2O	310	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	14.0523	metric tons N2O	**4,356.21**	metric tons CO2e
		Project Total:	***4,356.21***	***metric tons CO2e***

References

* from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.

** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

*** From URBEMIS 2007 results for mobile sources